Printing Equipment

Engineer

JANUARY 1947

GAS

supplies

THE PRODUCTIVE FLAMES OF INDUSTRY

for

The *productive flames of industry* perform countless other duties. Practically every heating requirement in printing and publishing is a logical task for GAS, the versatile fuel, and for modern Gas-fired equipment.

FLEXIBILITY—CONTROLLABILITY—SPEED—UNIFORMITY—ECONOMY; wherever these qualities are required in process-heating in the Graphic Arts, the dependable fuel is GAS. Inherent features of this fuel will suggest many additional applications in the printing industry.

Day by day, successful applications of GAS eliminate production snarls in hundreds of plants. Year after year, engineers and production managers specify GAS for increasing numbers of heating installations. More and more the *"Trend is to GAS"* for all industrial heating.

Your local Gas Company analyzes special heating applications every day. Results of these studies will be helpful to you, too. An experienced Industrial Representative will recommend the proper use of GAS for your production printing processes.

- **Glue Pots**
- **Ink Drying**
- **Mat Drying**
- **Wax Kettles**
- **Paper Curing**
- **Stereotype Pots**
- **Embossing Presses**
- **Type Metal Melting**

AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE, NEW YORK 17, N.Y.

WHEN YOU COME TO CALIFORNIA...

Almost everyone, it seems, eventually does come to California, for one reason or another. And while you're here in Los Angeles, however brief your stay, we hope you'll take time to visit us.

We would like to "talk shop" with you, show you our modern, efficient plant, where master craftsmen make Sta-Hi Master Formers and other stereotype machinery, building it with infinite care and precision to your own specifications.

During the past year it has been our happy privilege to add a host of new customers to the large list of newspapers and commercial printing plants which down the years have come to know that the trademark "Sta-Hi" is synonymous with superior stereotyping equipment.

We'd like to greet you and thank you personally . . . When you come to California.

STA-HI

STA-HI CORPORATION • 1020 CROCKER STREET • LOS ANGELES 21

Fast, Accurate Shaving

FOR ALL FLAT WORK WITH

PLANE-O-PLATE

ROTARY SHAVER

★

YOU'LL SPEED PRODUCTION in your plant with a versatile Plane-O-Plate rotary plate shaver. This fast, accurate machine shaves plates up to newspaper page size (or full bed of small plates) in 30 seconds.

DOES ACCURATE WORK. Precision-built micrometer allows fine adjustments for accurate shaving. Rotary helical cutter shaves evenly . . . leaves no high spots. Handles all flat work—stereos, electros, zincs, and wood or stereo base—from .055″ to .940″.

IMPROVES PRINTING. Plane-O-Plate Shaver assures uniform printing levels for sharp, clean reproduction of plates. Reduces time and labor usually spent in underlaying cuts and juggling irregular plates in the form.

SIMPLE TO OPERATE. Merely place plates on shaver bed, lower chip catcher and press starting button. The rest is automatic. Rotary-type cutter head shaves faster with less motor effort, less strain. Eliminates chance of damaging plates through biting, buckling or breaking. *Plane-O-Plate is an equipment investment that soon pays for itself.*

Features

ROTARY CUTTER is one-piece, helical-type. Assures smooth, precision shaving at high speed. Shield over cutter protects operator from flying chips.

CONTROL BUTTONS are easily accessible, simple to operate. Adjustments are easy to make—merely turn elevator wheel.

TRIP DEVICE at each end of shaver automatically shuts off motor when table has completed forward or reverse movement.

SAFETY SWITCH stops table immediately if thickness of plate is greater than table is set for.

CHIP CATCHER keeps working area around cutter clean and free of muss.

Write today for new, illustrated folder on the Plane-O-Plate. Tells how to increase shop production.

Monomelt Company, Inc., together with General Mills, Inc., makers of precision built equipment, is working on a new, larger shaver for all heavy-duty applications.

THE MONOMELT COMPANY, INC.

1611 N. E. POLK STREET MINNEAPOLIS 13, MINNESOTA

AND THIS IS WHAT THEY WROTE . . .

Vigorous hints of prideful satisfaction are these clippings from recent letters of Miller users. They know; they have compared Millers with other presses and processes. A typically frank statement reads: "Remember . . . in 1940 I said to you, 'Miller Automatics are the only presses which will do the quality of work our firm wants to produce. So, our twelve Millers (including the two Miller Two-Colors on order) verify my prediction." Such is the keen judgment of which success is made — and further exemplified by thousands of Miller Automatics in America's foremost pressrooms.

MILLER PRINTING MACHINERY CO., Pittsburgh

. . . these machines have produced fifteen and sixteen million impressions each.

The total expenditure on a Miller Major installed in October 1940 has not exceeded $35.00 which in our opinion is very good when one considers the thirty-eight million printed sheets produced.

We are pleased with the performance of all your presses and am glad to inform you that the new Simplexes now are on the floor waiting your erector.

I have owned this Miller about 16 years and it has paid for itself every two years that I have owned it.

As you know, we operate twenty-four hours a day and during the past few hectic years when printing machinery took an unmerciful beating it is a pleasure to say that our presses stood up far beyond our fondest expectations with a remarkably low unit maintenance cost.

Our plans for expansion therefore have Miller equipment for their basis and we expect to have at least three more Miller Two Colors and four Simplexes as soon as they are available.

After several years of operating one of your 27 x 41 Miller Majors, we have come to a definite conclusion that we wish to standardize on your equipment.

This press has been in continuous use in our plant for about nine years, and in this time has produced almost fifty million impressions.

P.S. It might interest you to know that this has been running and no serious repairs, since it was installed in 1922. Never a mechanic has worked on it.

". . . and one-half million impressions a year.

I am happy to say that in this ten million impressions we have experienced no mechanical difficulty of any kind with this piece of equipment.

"miller size and modernize"

SAM'L BINGHAM'S SON MFG. CO.

MANUFACTURERS OF

PRINTERS' ROLLERS

LITHO-OFFSET ROLLERS

RUBBER
NON-MELTABLE
FABRIC-COVERED
ROTOGRAVURE

ROLLERS

OFFSET
COMPOSITION
VARNISH & LACQUER
GRAINING

PRINTERS ROLLERS

COMPOSITION: SYNTHETIC RUBBER;
NATURAL RUBBER; VULCANIZED OIL

FOR EVERY PRINTING PURPOSE

WE ARE NOW MAKING COMPOSITION ROLLERS

FOR WINTER USE

SHIP YOUR OLD ROLLERS

TO FACTORY MOST CONVENIENT TO YOU

FACTORIES

ATLANTA 3	DES MOINES 2	KALAMAZOO 12	OKLAHOMA CITY 6
CHICAGO 5	DETROIT 10	KANSAS CITY 6	PITTSBURGH 3
CLEVELAND 14	HOUSTON 6	MINNEAPOLIS 15	ST. LOUIS 2
DALLAS 1	INDIANAPOLIS 2	NASHVILLE 3	SPRINGFIELD, O.

1847 - 1947

ONE HUNDRED YEARS OF ROLLER MAKING

PRINTING EQUIPMENT *Engineer*

Volume 73 Number 4

A technical publication for the mechanical executive responsible for printing production, equipment and supplies in the commercial, magazine, private plant and daily newspaper field.

PRINTING EQUIPMENT Engineer, Published monthly at 1276 West Third St., Cleveland 13, Ohio. Copyright 1947 by Willsea Publishing Co.

EDITORIAL STAFF

MacD. SINCLAIR, *Editor*

ADAM HENRI REISER, *Associate Editor*

HERMAN SLATER, *Associate Editor*

BUSINESS STAFF

DON WILL, *Publisher*

William L. Osborn, Eastern Representative, 509 Fifth Ave., New York 17, N. Y. Phone: VAnderbilt 6-0890

John M. Sweeney, New England Representative, 176 Federal St., Boston, Mass. Phone: LIberty 9607

Richard G. Byrne, Central Representative, Carnegie Hall, Cleveland 15, O. Phone: MAin 8667

Everett Bloomster, Midwest Representative, 232 East Erie St., Chicago 11, Ill. Phone: SUperior 2444

Robert C. Craig, West Coast Representative, 601 S. Vermont St., Los Angeles 5, Calif. Phone: FAirfax 1363

Subscription price per year, $3.50 in advance in U. S. A. Single copy current issues 35c; feature issues $1 per copy; December Equipment and Supplies Catalog Issue $1 per copy. Subscriptions in foreign countries $4.50 (U. S. currency) in advance. Canadian printing plant mechanical and production executives receiving Printing Equipment Engineer under CCA regulations will be charged $1 postage per year in advance to cover additional postage to Canada.

Member Circulation CCA Controlled Audit

Printed in U. S. A.

LEADING ARTICLES, JANUARY 1947

"Neoprint" The Letouzey Method of Letterpress Printing.....15

Light and Equipment are Inseparable in The Printing Industry.18
By WILLIAM FEATHER, Jr.

The 100th Anniversary of the Hand Cut Overlay.....20
By PERRY R. LONG

Press Designed for Adding Newspaper Color Printing Equipment.22
By JOHN J. SWEENEY

Equipment & Supplies.....27

Automatic a.c. Printing Press Control
Heribol Ink and Lacquer
Portable Electric Hoist
Hurleton Exposure Control
Olson Folding Machine
ATF's Book Edge Imprinter
Solock System Bars
Welding Bulletin
Halftone Screen Finder
Controls Humidity Content of Paper in Plant
Self-Adhering Register Marks
Wallastar Newspaper Bundler
Printing Rubber Folder
Christensen Varnishing Machine
Harris LTN Offset Press
Announce Two Offset Presses, p. 34
New Chairside Model, p. 38

Trivision Which Furnishes Third Dimension or Depth Perception.33

Matrix Maintenance Tool Assembly.....35

Device Rings Bell When Short Matrix Lines on Teletypesetter-operated Linotype Fail to Cast..36

Executive Paragraphs.....42

Patents for Graphic Arts Field....47

Annual 1946 Editorial Index 62

BUYERS' GUIDE FOR JANUARY 1947

American Gas Association.Inside Front Cover
American Publishers Supply.....58-60
American Type Founders, Inc.....6
Atlantic Zinc Works.....47
Baum, Russell Ernest.....59
Beveridge Paper Co.....52
Bingham's, Sam'l, Son Mfg. Co.....4
Booth, E. A. Rubber Co.....54
Breuer Electric Co.....59
Burgess Cellulose Co.....48
Certified Dry Mat Corp.....60
Challenge, The, Machinery Co.....53
Cline Electric Mfg. Co.....59
Cottrell, C. B., & Sons Co.....43
Coxhead, Ralph C., Corp.....53
Deublin Co.....59
Duplex Printing Press Co., The.....59
Dutro, Orville, & Son.....12-13
Hammond Machinery Builders, Inc.....55
Harris-Seybold Co.....8-9
Heinrich, H. H., Inc.....55
Imperial Type Metal Co.....57
Intertype Corp.....Outside Back Cover
Johnson, Charles Eneu, & Co.....11
Linotype Parts Co.....52-54
Ludlow Typograph Co.....7
Marisa Engineering Products.....59
Matrix Contrast Corp.....14
Mergenthaler Linotype Co.....45
Miller Printing Machinery Co.....3
Mohr Lino-Saw Co.....60
Monomelt Co.....2
Morrison Co., The.....58
Ohio Knife Co.....50
Pitman, Harold M., Co.....50
Reid, William, Co.....59
Richards, J. A., Co.....59
Rouse, H. B., & Co.....59
Royle, John, & Son.....56
Sta-Hi Corp.....1
Standard Tag Co.....57
Star Cement Co.....59
Syntron Co.....56
Teletypesetter Corp.....49
Tingue, Brown & Co.....60
Type & Press of Illinois, Inc.....10
Vandercook & Sons, Inc.....58
Wax Refining Co.....51
Wood Flong Corp.....57
Wood Newspaper Machinery Corp.....46

ON HAIRLINE-REGISTER COLOR WORK

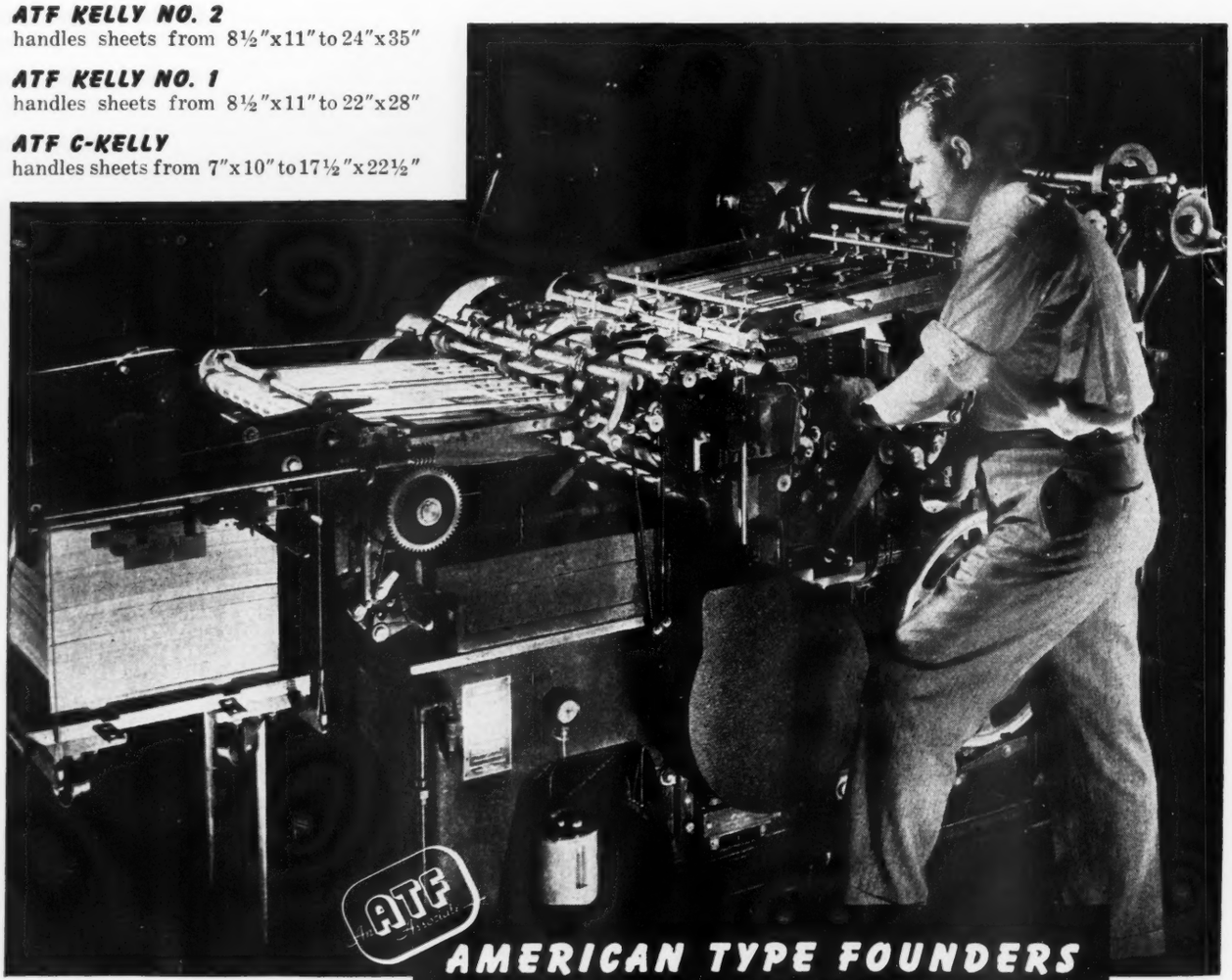
ATF KELLYS STILL KEEP ROLLING TOP SPEED

ACCURATE REGISTER is a built-in feature of every Kelly. It's more than the superb precision of every part . . . it's especially the *engineered* coordination of side guides, tumbler grippers, rigid construction, and perfect synchronism of cylinder and bed. The register holds throughout the run, even at top-speed production. Ask your ATF Salesman, or write to us, for commercial samples of actual runs of close-register color forms that show what Kellys can do for you.

ATF KELLY NO. 2
handles sheets from 8½"x11" to 24"x35"

ATF KELLY NO. 1
handles sheets from 8½"x11" to 22"x28"

ATF C-KELLY
handles sheets from 7"x10" to 17½"x22½"



AMERICAN TYPE FOUNDERS
200 ELMORA AVENUE, ELIZABETH B, NEW JERSEY

Important facts

about the LUDLOW for all printers

VERSATILITY . . . Typography of outstanding quality, attention-compelling advertising display, attractive feature heads, forceful news heads, high-grade commercial work, clean-cut ruleforms, as well as imprints and special composition—all produced on the Ludlow.

WIDE RANGE . . . Type sizes from 4-point to 96-point, and large size price figures, produced in sluglines as needed, without preliminary type purchases or manufacture. Distinctive italics and scripts for the typographer who wants something "different." Excellent array of lining typefaces for the manufacturing stationer, ruleform specialist, or general commercial printer.

SIMPLICITY . . . No experts are required for successful and profitable Ludlow production. Compositors can readily learn to use the Ludlow, and to produce a variety of composition for practically any requirement. There is no complicated mechanism to get out of order.

Write us for complete information about the Ludlow and its many advantages in your own work.

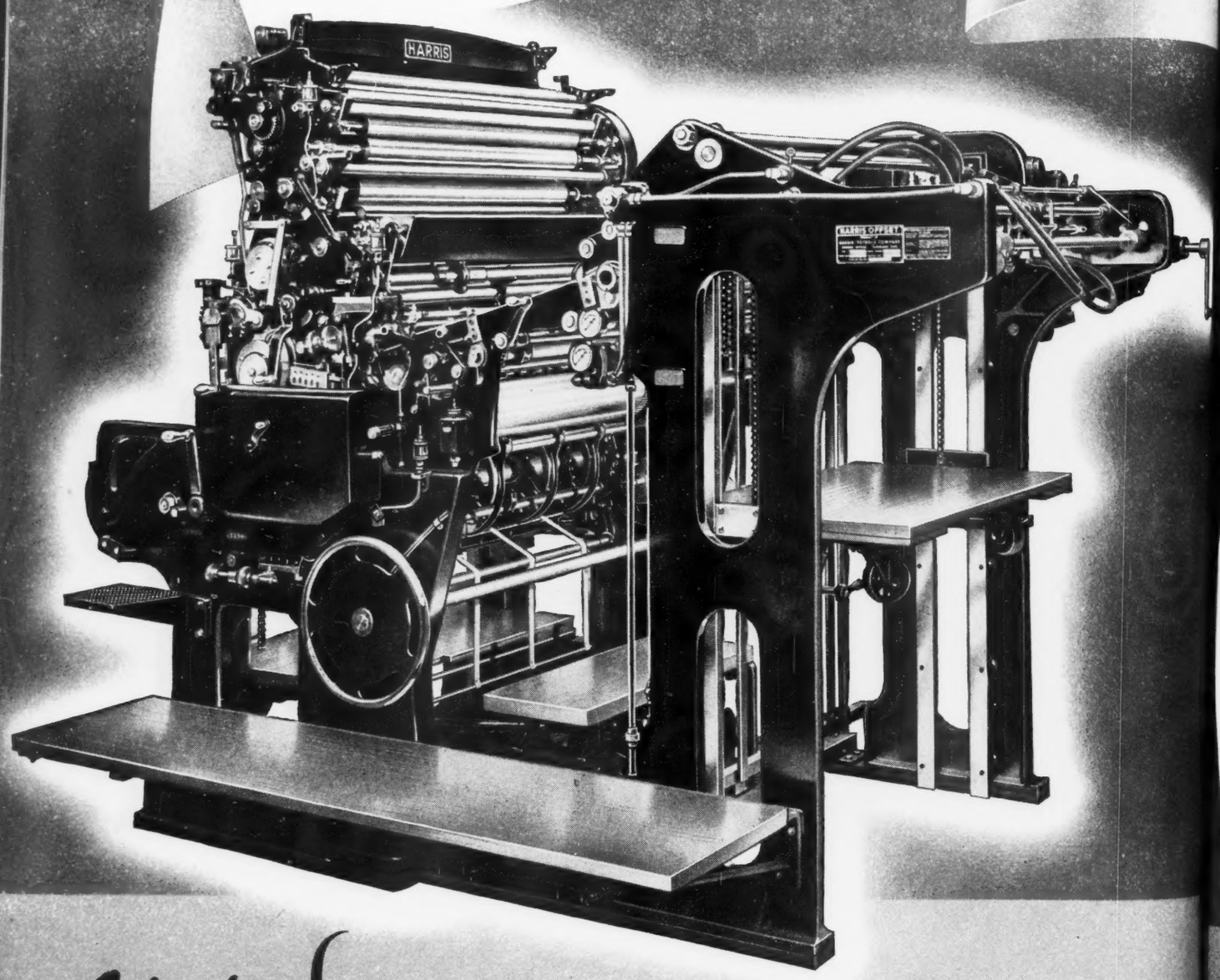
the LUDLOW

Ludlow Typograph Company . . . 2032 Clybourn Avenue . . . Chicago 14, Illinois

Introducing the

HARRIS 22x34"

Model LTN Single Color Offset Press



Gives you

- FASTER MAKE-READY
- MORE POSITIVE REGISTER
- CONTROLLED INK COVERAGE
- MORE SALABLE SHEETS PER HOUR
- GREATLY REDUCED MAINTENANCE
- CONVENIENT SERVICING

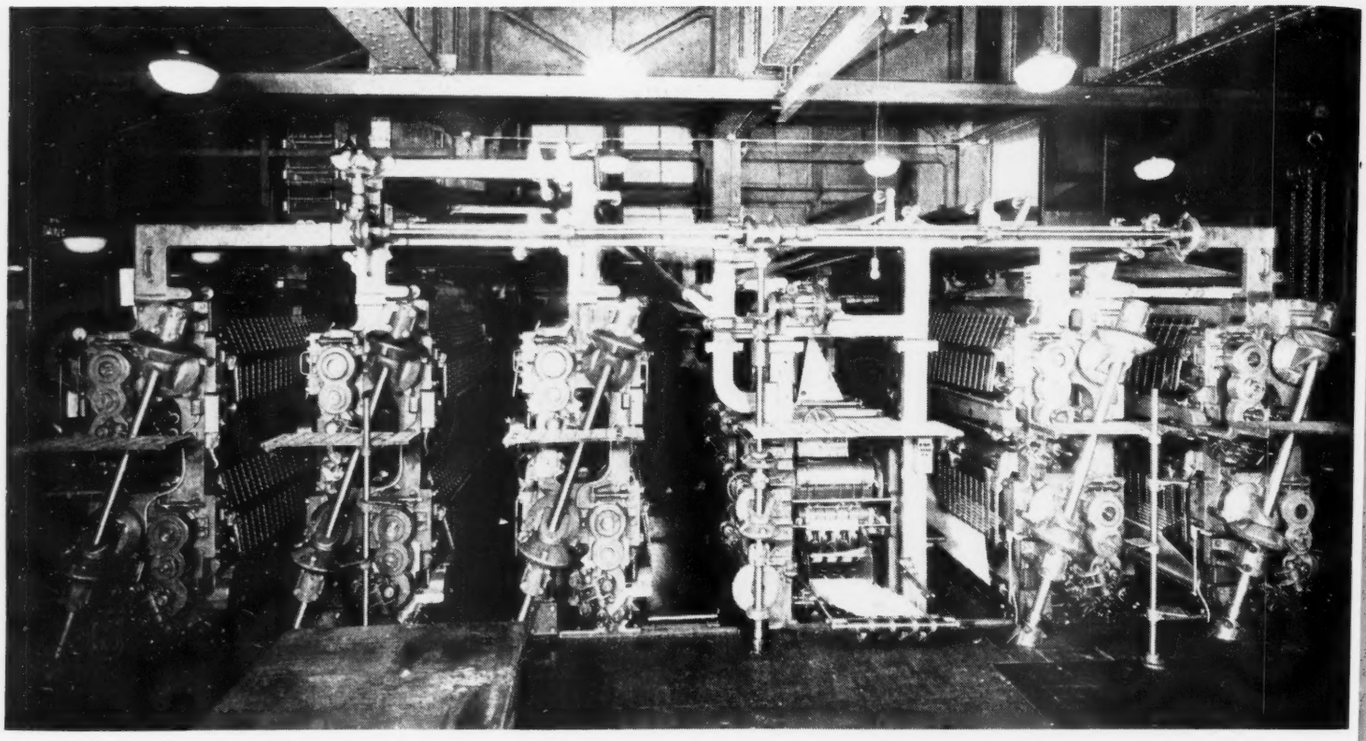
Reserve a place in your plans for the Harris Model LTN, 22x34" Single Color. Design improvements in this outstanding new model will open your eyes—will establish entirely new concepts of offset press performance. ¶ For instance, the Harris LTN will change your thinking about the time required for make-ready. That's only the beginning. For, hour after hour, it will deliver a continuous flow of sheets—in perfect register and with a uniformity of ink coverage such as you have often hoped for but seldom have experienced. You'll learn, also, what it means to have an absolute minimum of mechanical interruptions during the run—to average, in salable sheets, more nearly the maximum production speed for which the press was designed. ¶ So, if you are looking for *a better run for your money*, be sure to reserve a place in your plans for a Harris LTN.

HARRIS-SEYBOLD

General Office • Cleveland 5, Ohio

Do not expect early delivery. Since schedules do change, however, contact your Harris-Seybold representative for factual information regarding deliveries.

HARRIS PRESSES • SEYBOLD CUTTERS • OTHER GRAPHIC ARTS EQUIPMENT



HOE SUPER-SPEED 5 UNIT PRESS - No. 2492

A compact and modern rotary installed new in 1929. Cut-off 23 3/16 ths". Printing up to 40 pages at maximum rated speed, 48,000 per hour, or 80 pages collect.

Mechanical maintenance, the very best to satisfy critical and severe requirement.

Electrical equipment 60 cycle Alternating Current 3 phase, 220 volts. Kohler reels, forged steel cylinders, roller bearings, Hoe patented ink fountains. Spot colors. Cutler - Hammer drive includes 19 auxiliary push-button stations.

Stereotype equipment includes 6 ton Kemp furnace gas fired. Junior Autoplate caster and Autoshaver.

Entire layout available in 1947 when the new building and new press units will be up and running. Inspection invited.

Other current offerings include—

GOSS 36 page Straightline equipped for color. DUPLEX 48 page unit press, 22 3/4" cutoff, overhead feed, Alternating Current 60 cycle. GOSS 64 page straightline equipped for color, Direct current 230 volt electrical equipment. GOSS 96 page, cutoff 22 3/4", Kohler reel, three colors and black, 2 double folders with balloon formers, Direct Current electrical equipment.

TYPE & PRESS OF ILLINOIS, INC.

220 SOUTH JEFFERSON ST. CHICAGO 6, ILLINOIS

Distributors for the past fifteen years of such quality products as Thompson Cabinets, H. B. Rouse, American Steel Chase, Nelson and Morrison C & G Saw trimmers and other proven equipment.

Seven words to the wise:

Use Johnson SPEED KING Quick Setting BLACKS

■ **SPEED KING BLACKS,** like all Johnson Inks, are products of highest quality . . . the result of 142 years' experience in meeting the demands of exacting craftsmen. Thus, besides saving time, SPEED KING BLACKS make it easier for you to turn out superior printing.

■ **SPEED KING JOB BLACK 3804**—sets very quickly and produces a good final binding overnight.

■ **SPEED KING CYLINDER BLACK 3804-S**—has softer body than BLACK 3804, but all other characteristics are the same.

■ **SPEED KING CYLINDER BLACK 3814**—sets very quickly and produces satisfactory binding on softer stocks. It will remain entirely open on the press overnight.

■ You will profit by using Johnson SPEED KING Quick Setting BLACKS, so don't delay putting them to work—send your order now.

CHARLES ENEU Johnson AND COMPANY

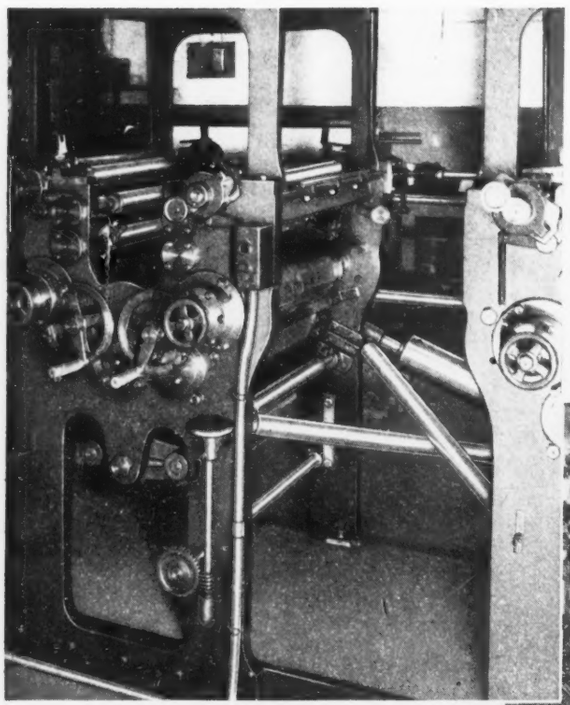
GOOD INKS SINCE 1804

10th and Lombard Streets, Philadelphia, Pa.

NEW YORK • CHICAGO • BOSTON • ST. LOUIS • CLEVELAND • DETROIT
BALTIMORE • KANSAS CITY • PITTSBURGH • ATLANTA • DALLAS

Introducing...

The DUTRO PHOTOCHROME RELIEF OFFSET PRESS



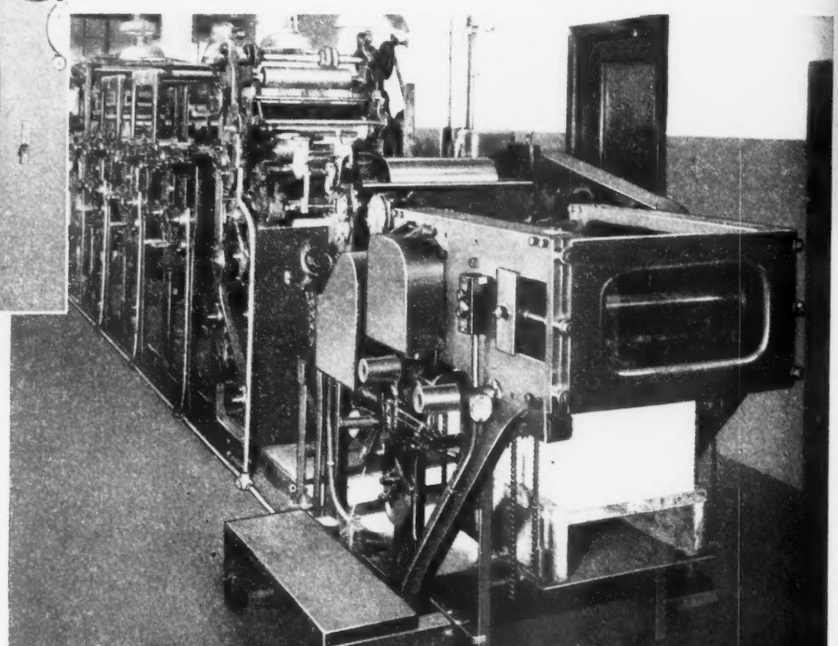
A single two-color photochrome unit

These thoroughly proved, high speed, multi-color production presses are not a new development. Designed and built in secrecy and operated around the clock for several years, they have been creating some tough competition!

Now — they are available to the trade. They are designed and sold by Orville Dutro and Son of Los Angeles and are built by Joshua Hendy Iron Works of Sunnyvale and Torrance, California.

Take a look at these printing presses — strong, sturdily and neatly designed — no gimcracks, no filigree — everything made for easy operation.

These outstanding, proven presses offer a world of possibilities for alert printing and publishing concerns. . . .



Six-color photochrome press

THE PHOTOCHROME PRESS shown in the accompanying illustration has three 2-color printing units — 6 colors in all. It has automatic tension, infeed rolls, an auxiliary unit with cross and rotary perforation and rubber plate strike-in cylinders. It is equipped with a receding pile delivery which automatically lowers *without adjustment* for any thickness of paper from tissue to light weight tag. It will print on one or both sides of the web or on 1, 2 or 3 webs at 15,000 press revolutions per hour.

Yes — that means 15,000 per hour 17 x 22 sheets printed in 6 colors, or 45,000 per hour 17 x 22 sheets printed in 2 colors on 1 side.

The machine can be built for any number of colors or combinations to meet the requirements of your particular line.

Here are some of the outstanding advantages of the Photochrome:

- Plates are pre-registered.
- Plates may be photo-composed or printed in a printing frame.
- Plates last for from 3 to 5 million impressions.
- Produces quality comparable to lithography.
- Makeready time averages 20 to 35 minutes per color.
- Maintains accurate register and side margins.
- Uses either water or oil ink.
- Plates do not have to be gummed up or rolled up, and there is no water fountain.

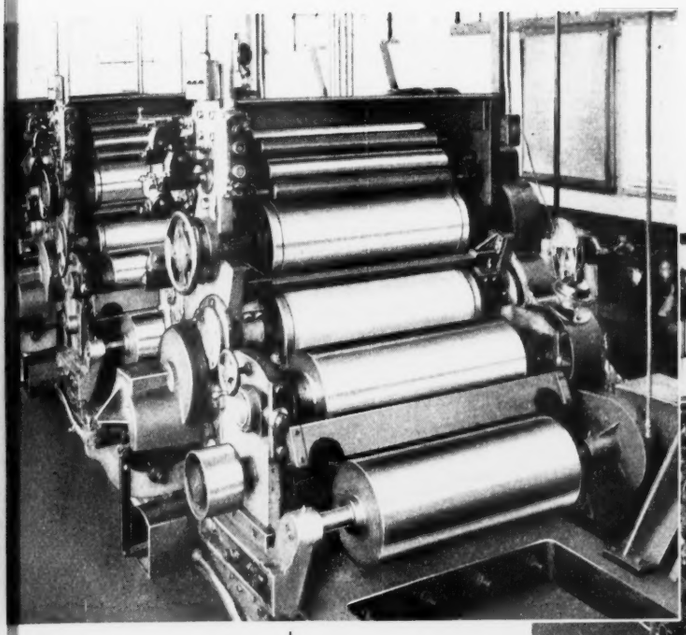
The following features can be added:

Rubber plate strike-in cylinders. Rotary and cross perforation. Automatic receding pile delivery. Rewinder. Folder. Ink Dryers. Pasters. Punching. Numbering.

The press is suitable for the following types of jobs:

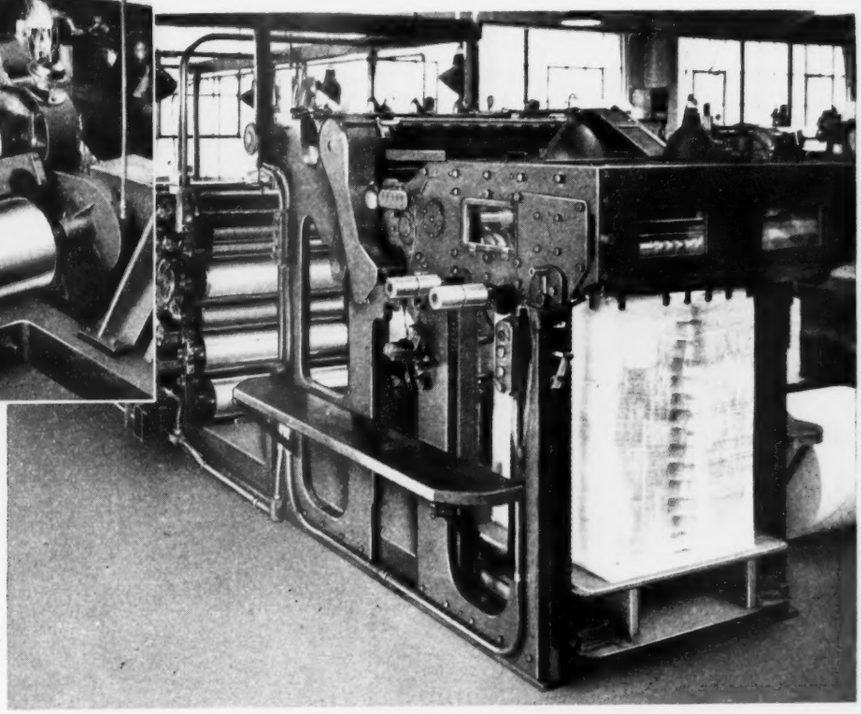
All types of advertising within its size range. Envelopes and letterheads. Labels. Gum Paper. Brochures. Enclosures. Booklets. Production of safety paper. Wrappers. Many types of commercial forms. Any weight of paper from tissue to light weight tag.

and the DUTRO AUTOMATIC WEB OFFSET PRESS



Three units of offset press

Automatic receding pile delivery



This fully automatic web offset press is another Dutro money-making unit. . . .

To start the press you simply push a button — the press starts in slow speed. After a brief interval the water rollers contact the plate — after another interval, the ink rollers come down — impression comes on. There are no levers to move. *All actions are automatically timed in the proper sequence and are simultaneous on all units.* The receding pile delivery is automatic too, and lowers without adjustment for any thickness of paper.

Illustrated is a three unit machine with automatic tension infeed rolls and receding pile delivery. However, the unit can be built for any number of colors and for front and back side printing.

Now available in three sizes — 33 x 28, 33 x 45 and 28 x 34.

Magazine and newspaper publishers — watch this one — Here are a few ideas of what can be done with this new machine as a publication press size 33 x 45 equipped with a folder and operating at 12,000 to 14,000 per hour:

- A two unit press can deliver an 8 page newspaper in one color.
- A four unit press can deliver an 8 page newspaper in 3 colors on one side and 1 color on the reverse side, or a 16 page newspaper in one color.
- A five unit press can deliver an 8 page newspaper section having 4 color process printing on one side and one color on the reverse side, or an 8 page newspaper or section with three colors on 1 side and 2 colors on the reverse side, or a 16 page section with 4 pages in 2 colors and the remaining pages in one color.

For tabloid sizes, the number of pages would be doubled, and with a magazine folder many combinations and sizes can be produced.

BUT THAT IS NOT ALL . . .

This versatile press can be used for job printing too — letterheads, envelopes, labels, brochures, banners, enclosures, wrappers or "what have you" in the great field of lithography.

Below are listed some of the advantages:

- Uses a standard deep etched litho plate.
- Has pre-registration.
- Makeready time averages about 45 minutes per color where close register is required.
- Accurate register, convenient controls and easy accessibility.
- Speed — 12,000 to 14,000 per hour with folder or rewinder. 9,000 with receding pile delivery.

With drawings, patterns and tooling, and the vast facilities of Joshua Hendy Iron Works available for manufacturing, we can start production on your order immediately.

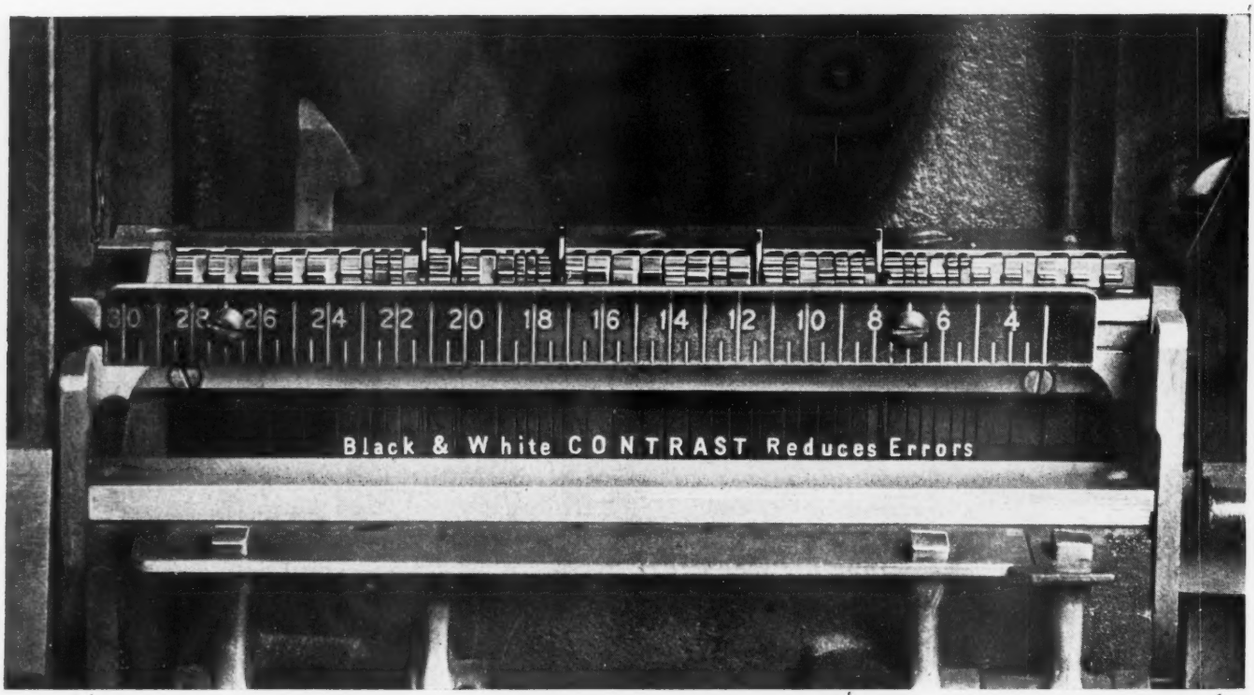
For further information, telephone, wire or write Orville Dutro and Son, Bendix Building, 1206 Maple Avenue, Los Angeles 15, Calif.

ORVILLE DUTRO & SON

600 Bendix Building
1206 Maple Avenue
Los Angeles 15, California

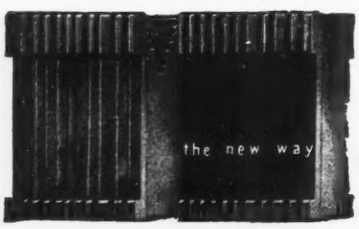
Why Matrix Contrast Service

PAYS BIG DIVIDENDS



Matrix Contrast Service saves an average of one-third of all errors in original machine composition. This means not only a saving in operator and machine time ordinarily devoted to setting correction lines, but also saves the time of proofreaders, floormen and others. Besides, Matrix Contrast Service reduces eye-fatigue, conserves energy and promotes increased production.

NOW, COLOR—Matrix Contrast Service now offers reference marks processed in red, green, yellow or orange against a jet black background. These distinctive colors on different fonts aid in detecting wrong font errors and provide quick, positive selection of "pi" matrices. Write today for complete information on this new, optional feature of Matrix Contrast Service.



MATRIX CONTRAST CORPORATION, Empire State Building, New York 1, N. Y.
326 W. Madison St., Chicago 6, Ill.—1105 Trenton St., Los Angeles 15, Calif.—Sole licensees of the Percy L. Hill Matrix Contrast Patent No. 1,796,023, other patent pending. European Agents: Funditor, Ltd., 3, Woodbridge Street, Clerkenwell Green, London, E.C.I.

Matrix Contrast Service

EDITOR'S NOTE:

THE accompanying article was received from Victor Letouzey of Letouzey & Co., Paris, France. Mr. Letouzey operates a pilot plant for development of the process located in Gentilly, a suburb of Paris. As is stated in the opening sentence, "the Letouzey process is a system of printing letterpress without makeready, interlay or overlay." The main objective of the method is to eliminate makeready and preparation time in the pressroom. Mr. Letouzey writes us that because of the engineering control method employed, 82% of the total theoretical production capacity of presses is secured. Apparently, the method is being used in the printing of books and reviews. Just to what extent the developer thinks it will be practicable to utilize the method on all classes of work, we are unable to say.

According to Mr. Letouzey, no makeready or pre-makeready is used. No registration is necessary on the press. The cylinder packing runs without change during 170 to 200 running hours. The paper printing spoilage is reduced to 1 per 1000 printed sheets. Stopping time of the press is reduced to between 7 and 10 min.

Composition is by Monotype at present. Varying punched depths of the matrices have been adapted to the system and are determined by the relative "density" of the type characters themselves.

Mr. Letouzey states that his organization has invented and built new precision measuring machines and proving instruments particularly for printing density of the types, for elasticity and compressibility measurements of the cylinder packings, for justification measurements and for determined space between metallic surfaces of the press. These are taken with the press running at full speed and pressure. It is his contention that "stopped press" measurements are not right measurements.

The printing speed is 3840 sheets per hour but Mr. Letouzey hopes before long to operate at 4500 to 5000. His plant prints books and reviews with or without illustrations with a saving of time and money ranging from 40% to 90% according to the quantity of delivered sheets in quantities from 1000 to 25,000.

We are unable to furnish much information upon a question that will occur to every printing executive. It is this: "What is done with line and halftone cuts when used in a form prepared by the Letouzey method?" Mr. Letouzey's organization is working on a means for preparing illustrations to make them suitable for use with the method. At present the cuts are interlaid to the extent of approx. 0.002 in. above our type height. When and if Mr. Letouzey releases information about treatment of engravings we will pass it along to our readers.

"Neoprint"

The Letouzey method of letterpress printing—Radical departure from accepted type high standard designed to eliminate press makeready

THE Letouzey process is a system of printing letterpress without makeready, interlay or overlay. Wastage of material, and above all, of time taken in changing from one form to another are cut down to a minimum; and the whole process provides an excellent illustration of the fact that, if all the stages of the printing process are brought under control and if sufficient care is taken at each stage (and particularly in the earlier stages), the desired results can be produced with ease and certainty and the standing time of machines can be cut down to a small fraction of what is usually considered to be necessary and unavoidable.

Development of the method has been based on the argument that *the essential function of a printing press is to print and that time spent in making ready on the press is time wasted.* The idea is to get everything —machine, rollers, ink, paper and the form ready beforehand, so that they have only to be fitted together for printing to be started immediately. In this way the standing time of the press can be reduced to a matter of a few minutes at each change of form.

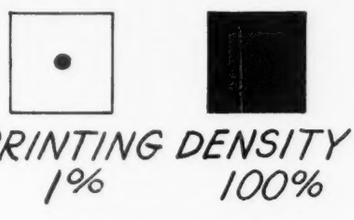


Fig. 1.—In the Letouzey method of letterpress printing, the printing elements (type characters) vary in height as distinguished from standard type height in the United States which is 0.918 in. for all characters. To explain let us suppose we have two types with bodies of the same cross-sectional area as illustrated in this Fig. 1. The printing surface of the one type character is a point (period) while the printing surface of the other is the complete square of the same size type body. Less pressure is required to print the point (period) than is necessary for printing the whole square. Thus the printing density of the black square is 100% while that of the period is only about 1%.

The Principles of the Method

Briefly, the main principles of the method are as follows: 1. *Different type characters and outlines require different printing pressures according to the actual printing area of the character itself.*

M. Letouzey adjusts these printing pressures by a predetermined departure from normal type-high for each character (in contrast to usual method of varying the pressure by makeready on the impression cylinder). He considers the well-established rule of standard height for all characters to be fundamentally wrong. He uses a packing of definite hardness and resiliency on the impression cylinder according to the particular job and the paper used. This packing and the variations in height of the characters determine the printing pressure.

2. *Precision methods are necessary at every stage in the preparation of the form and in the setting of the machine.*

M. Letouzey works on the principle that each state in the preparation of matter for the press must be conducted with precision. Each operator must know how to accomplish the work intrusted to him so that those who follow him will not have to correct previous work. Precision methods are put into operation at each stage: Composition, makeup, proofing, and imposition. The dressing of the press impression cylinder is carefully planed and tested for hardness and resiliency. The printing pressure and adjustment of the machine run for long periods without adjustment. Such insistence on precision methods may seem to imply the expenditure of excessive time by skilled workmen, but in practice this is found not to be the case. Any cost of extra care in the early stages is more than compensated for by the time saved in stoppages of the machine, as will be seen from figures quoted later.

The Scope of the Process

It is stated at the outset that the Letouzey method can be applied to all possible methods of printing by letterpress. At its present stage of development, the process prints from founder's type, Monotype, Intertype or Linotype. It is not advisable to try to adapt the process immediately to a whole work; it is far better to introduce it slowly, one machine being converted at a time, since the training of the operators takes time. It will thus be seen that under normal conditions the time spent in preparing the machine for each form can be great compared with the actual running time of the machine; in short, the stopping time of the machine is an important factor influencing the cost of the finished job. In the Letouzey plan,

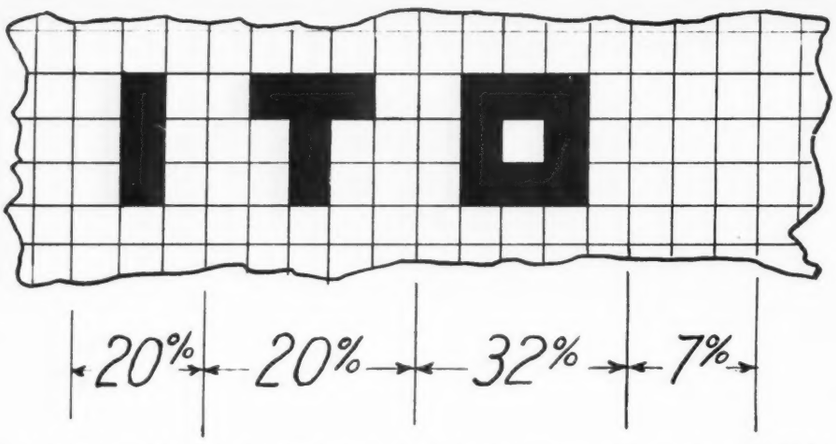


Fig. 2.—To explain further the Letouzey method of letterpress printing, the word ITO. is represented diagramtically by a drawing on a section of graph paper. Thus, a relation exists between the printing density and the pressure required for satisfactory impression. In this diagram *I* occupies 3 squares out of 15 making the printing density 20%; *T* occupies 5 squares out of 25, making the printing density 20%; *O* occupies 8 squares out of 25, making the printing density 32%, and the . occupies 1 square out of 15, making the printing density 7%.

this stopping time is cut down to a minimum.

If one wishes to sum up the whole of the Letouzey method in two words, they are: *measurement* and *care*. There is no room for careless or slipshod work at any stage in the process from the setting of the type to collecting the finished sheets. Special care is deliberately taken during the early stages so as to save time in the later stages. It is claimed that with the new method two flatbed machines can do the work of five using the traditional method, when printing editions of text books necessitating some six or eight changes of form per day.

Production Figures

Here are some figures taken from the Letouzey plant. *Press:* two-revolution, size 60 x 80 cm. (i.e., 24 in. by 32 in.) with automatic feed; speed of printing, 2520 sheets an hour. Paper, 56 x 72 cm. composition rollers, black ink.

Forms: 8 pages Monotype, 7 or 8 Didot (approx. 8 pt.), with or without illustrations.

Standing time of the press between two consecutive runs: from 10 to 12 min.

Total time of printing run of 2000 copies: 57 min.; 7½ runs of 2000 copies per day of 8 hrs. (including all operations of feeding the machine, cleaning, greasing, etc.)

Less than 1 spoiled sheet per 1000 copies.

Two successive changes of form were timed as follows: One took 7 min., the other 13 min. In each case, the first impression after the machine restarted is satisfactory and no adjustment is necessary. On the large machine, the total standing time covers stoppage for change of form has been 332 min. This covers stoppage for change of form and paper, an average of 17 min. per form. On the small machine, the total stopping time for 20 consecutive forms has been 262 min., an average of 13 min. per form. It will thus be seen that the actual running time of each machine is a large percentage of the maker's rated output—83% in the one case and 83% in the other. Such a high rate of output necessitates the provision at easlier stages of adequate supplies of forms to keep the machine fully occupied.

Another aspect of the precision methods adopted is that *accurate records are kept* of the exact measurements of the form and its position on the machine. If a repeat edition is needed, it is a simple matter to replace the pages of original type (or fresh type) in a form in exactly the same position as that occupied by the original type.

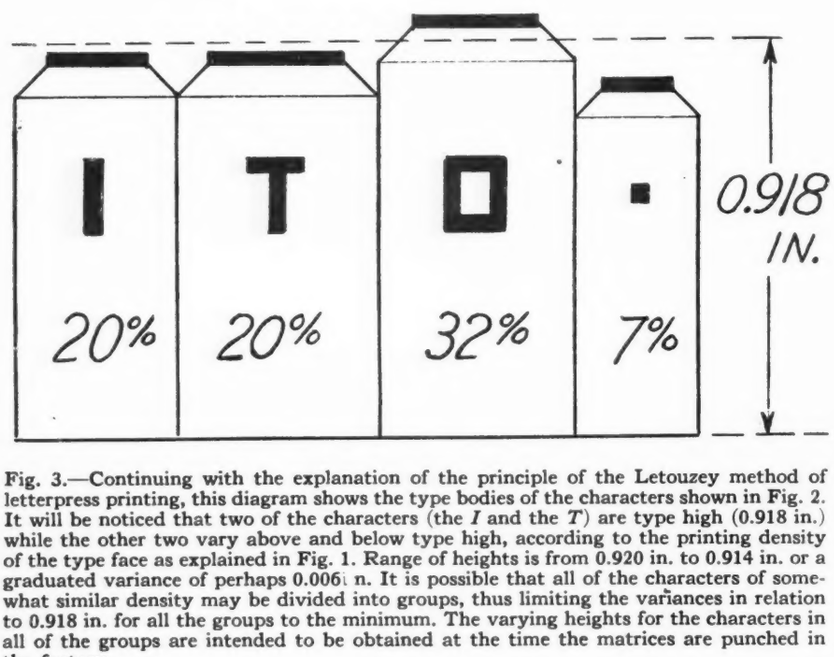


Fig. 3.—Continuing with the explanation of the principle of the Letouzey method of letterpress printing, this diagram shows the type bodies of the characters shown in Fig. 2. It will be noticed that two of the characters (the *I* and the *T*) are type high (0.918 in.) while the other two vary above and below type high, according to the printing density of the type face as explained in Fig. 1. Range of heights is from 0.920 in. to 0.914 in. or a graduated variance of perhaps 0.006 in. It is possible that all of the characters of somewhat similar density may be divided into groups, thus limiting the variances in relation to 0.918 in. for all the groups to the minimum. The varying heights for the characters in all of the groups are intended to be obtained at the time the matrices are punched in the factory.

Theory of the Process

Various type heights

The essential principle of the method is that the printing surfaces are slightly above or below normal type height, according to the "printing density" of the particular character. Thus letters like *m* and *w* are definitely and systematically higher in the form than letters like *l* and *i*, while full points and commas are lowest of all. The difference in height is not great, being only about 0.15 mm. (0.006 in.) in all.

The effect is twofold. Ink squash and embossing are thus reduced to negligible proportions. Comparatively light pressure is required for printing, so that there is little or no permanent deformation of the coverings of the impression cylinder. The time during which the machine is at a standstill is only that actually needed for changing from one form to another, since all checking has been done previously. Wastage of paper and ink is negligible, since in many cases the very first sheet taken from the next form is quite satisfactory and can be used on edition.

Various pressures

Let us suppose that we have two pieces of type with shanks of the same cross-sectional area (represented in Fig. 1 by squares), and suppose further that the printing surface (face) of the one is a point (period) while the printing surface of the other is a whole square. Less pressure is required to print the point than is necessary for printing the whole square.

Thus, in Fig. 1, the printing density of the black square is 100%, while that of the piece of type containing the small point (period) is only about 1%, since the point occupies only about 1% of the total area of the square. A relation exists between the printing density and the pressure required for satisfactory impression. For example, if you represent diagrammatically the word ITO. (Fig. 2) by

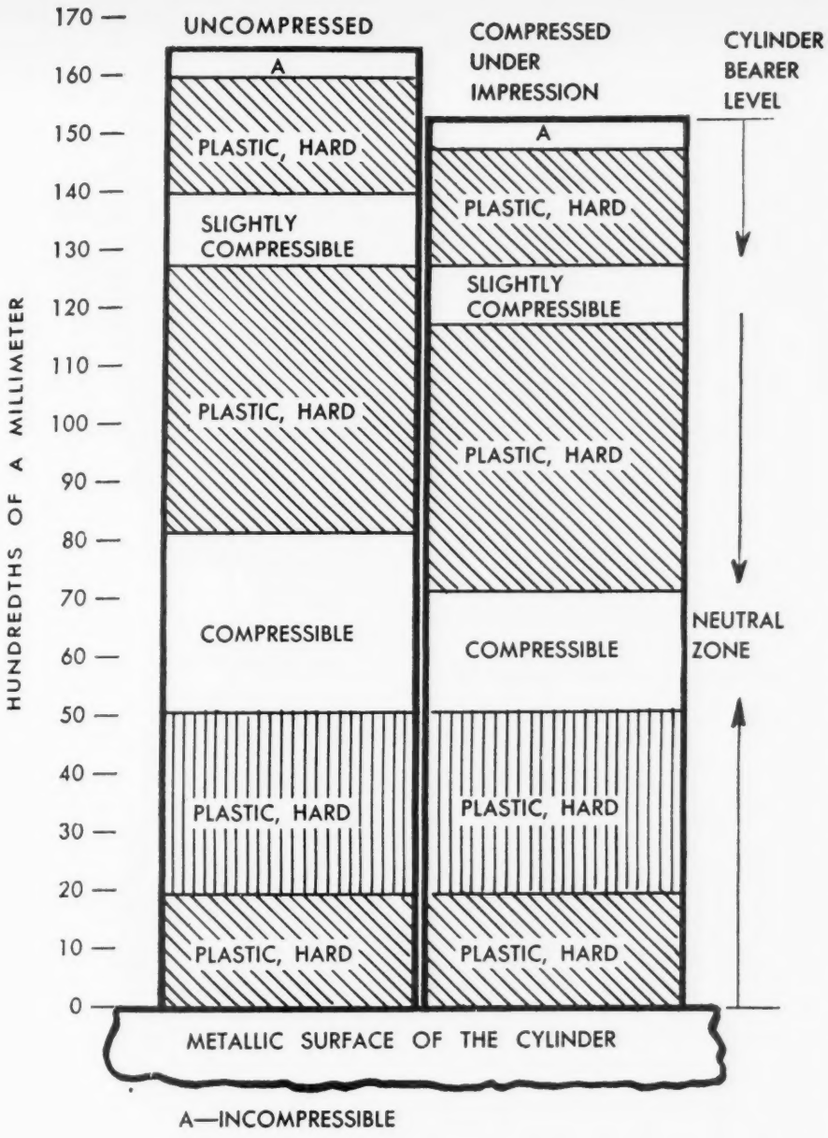


Fig. 4.—Diagrammatic cross-section of flatbed press cylinder packing or covering as used in the Letouzey method of letterpress printing. Mr. Letouzey uses a packing of definite hardness and resiliency on the impression cylinder according to the particular job and the paper used. The packing and the variations in height of the type characters determine the printing pressure. Qualities of packing are determined by Shore sclerometer tests.

a drawing on graph paper, we can see that approximately:

I occupies 3 squares out of 15, printing density 20%.

T occupies 5 squares out of 25, printing density 20%.

O occupies 8 squares out of 25, printing density 32%.

. occupies 1 square out of 15, printing density 7%.

Each of these letters will require for correct impression a pressure in relation to its printing density. The printing of the various characters can be determined by drawing enlarged plans of them and estimating with a photo-electric instrument which will allow the user to determine the printing density of any character or block rapidly by direct measurement.

Cylinder covering

The pressure is transmitted from the platen or cylinder by the packing, which is a sort of elastic or resilient mattress which yields to pressure. There are several requirements for this packing:

1. The cylinder covering must be *uniform in thickness* and have *uniform elastic properties* over its entire surface.

2. The distance which separates the metallic surface of the cylinder from the metallic surface of the bed must be *constant all along the line of impression.*

3. The deformation of the cylinder covering must not be so great as to exceed the elastic limits of the material of which it is made; that is, the pressure must not be so great as to cause permanent deformation of the covering when the pressure is removed. If the distance from platen to bed, or from cylinder to bed is known, as well as the thickness and elasticity of the cylinder covering, the printing elements can be prepared to suit, each according to its own printing density.

In normal practice, the printing characters are all of the same height—0.918 in. According to the usual technique, if one casts the word "ITO," all four of the characters will have the same height, namely 0.918 in. If the distance from bed to cylinder covering is constant, and the covering is of uniform thickness and elasticity, the four characters will receive the same pressure (per unit area of shank) which, if satisfactory for *I* and *T*, (20% printing density) will be a little too low for *O* which has a density of 32%, and a good deal too high for the full point, which has a printing density of only 7%. The letter *O* will thus tend to be of poor color, while the point will emboss the paper and the printed dot will be enlarged. To overcome this trouble, the normal practice is to increase the thickness of the packing over the *O* and to cut away part of the packing around the dot, though this can only be done to a very limited extent. The nature of the packing also complicates matters. Some packings are compressible—they yield under pressure with a consequent change in volume—that is, if the packing is pushed in at one point, it will swell out at a neighboring point. This latter behavior, if it occurs, makes adjustment of the press very difficult.

Standard type of packing

Accurate preparation of the press becomes possible if one adopts a standard compressible type of packing, and printing characters of heights appropriate to their printing density. In such a case, the packing can be compared to a multitude of tiny springs, against which the various printing characters press. The higher the character is, the more the springs are compressed and the greater is the pressure per unit area of shank. In the word ITO. (period), therefore, according to the new technique, *I* and *T* are of the same height, *O* is rather higher and the point (period) is appreciably lower; consequently, *I* and *T* compress the packing more than the point, but less than the letter *O*. If the heights of the characters are correctly chosen, this will give an automatic adjustment of the pressure and there will be no permanent local deformation of the packing or printing paper.

If a change is made to paper of different characteristics, it may be necessary to alter the packing covering to suit. It must always be remembered that the paper on which one is printing is really an integral part of the cylinder covering, and its thickness must always be taken into account when one is preparing this covering.

Since the pressure tends to drive the face of the type into the thickness of the cylinder covering, the real plane of impression is not quite the same as the outer surface of the cylinder covering when the pressure is removed. Fig. 3 shows a section through the cylinder covering which

(Continued on Page 58)

LIGHT and EQUIPMENT

are inseparable in the printing industry—One is deficient without the other—Glareless illumination provided in a Cleveland commercial printing plant

By WILLIAM FEATHER, JR., THE WILLIAM FEATHER CO., CLEVELAND, OHIO

WE HAVE just completed installing a complete fluorescent lighting system, covering both plant and office.

It cost a pile of money. We think it is worth it.

We have been considering this lighting for more than ten years. The war held us up, or we would have installed it long ago.

The lighting layout was supplied free of charge by the Cleveland Electric Illuminating Company. Vincent B. Murphy, sales engineer of that company, made the survey and drew up the blueprint. Installation was by the Herbst Electric Company of Cleveland.

In our plans for the future, we have considered also new presses, typesetting machinery, and offset equipment. However, most of this machinery is available now only by Reservation or Gentlemen's Agreement. We prefer writing purchase orders to signing such documents.

Fluorescent lighting was available. Our job was completed four months after we gave the contract to Herbst.

Unlike a single piece of new equipment, good lighting improves efficiency in all departments.

In the last fourteen months, our operating costs in all departments have skyrocketed. Anyone familiar with the printing business knows what has happened to wages in the industry in that short period. We are trying to get back some of these increased costs with a bigger volume through better over-all efficiency.

From my own limited observation, I would place lighting in the printing industry at below the average of most industries. Wages are among the highest.

In this industry, the eyes guide the hands. A printer's manual dexterity is determined by what he can see. Costs are usually computed on a time basis. If the speed of a man's hands is limited by his eyes, the employer is losing money.

Cost of machinery in this industry today, as compared to wage costs, is relatively small. Normally, if an employer found a press delivering at 10% below its rated capacity he would do something about it. By the same token, if he has reason to believe the efficiency of both shop and office personnel is limited by poor lighting by as little as 5%, he ought to do something about that because the investment is so much bigger.

According to Murphy, studies made by the Cleveland Electric Illuminating Company during the war indicate production increased about 7% when lighting was brought up to standard.

Based on our office and plant payrolls as they are today, our fluorescent lighting will pay for itself in ten years if we get an increase in production of 1.75%. This includes the original cost of installation, depreciation at 10%, interest on the original investment at 5%, taxes and insurance at 5%, lamp replacements, maintenance cost, and cost of power.

Holes can be punched in this argument.

Can we continue in business for ten years? Your guess is as good as mine, but I would point out this is a chance you take whenever you invest capital in any business.

The figures are based on our present volume of business which is fairly close to capacity. When we enter a period of business recession, as we surely will, what will happen to our efficiency increase of 1.75%? If wages don't come down with prices and volume, we will have to get even greater efficiency. However, the average increase in efficiency is 7% which is four times better than we have to do. And if I thought our volume would fall off 75% at any time within the next ten years, I would cash in now.

Our plant is cleaner than it was before. All of us are unconsciously doing our part to keep it neat and orderly.

We hope to get greater accuracy. Mistakes in this business can be painful.

Pictures accompanying this article indicate fairly clearly our over-all plan. The whole premises is lighted by two-light industrial fixtures hung twelve feet high in solid rows, thirteen feet apart. Lighting at frames, stones, and keyboard and casting machinery is supplemented by two- and three-light fixtures hung at seven feet.

We have installed fluorescent fixtures over the beds and ink fountains of each cylinder press.

Minimum readings in open areas of the plant are now 35 footcandles. Other footcandle readings are: Frames, 100; Monotype keyboard, 40; Monotype casting, 65; Linotype, 50; stones, 160; line-up table, 125; pressroom, 60 to 80; bindery, 45 to 60; shipping room, 48; office, 50. The light provided over press beds and fountains is 40 footcandles.

All of the lamps are soft white, except those attached to presses which are of the daylight type.

Now all we have to do is get the work out.

WHEN one walks into the plant of The William Feather Co., Cleveland, he experiences a feeling of ease and sight-free well-being. There are no contrasty light and dark areas and the working "spots" are glareless. The engineering of lighting in printing plants is an exact science. Proper lighting conditions have been achieved in the Feather plant. General lighting is provided by two-light industrial fixtures hung 12 ft. high in solid rows 13 ft. apart. Localized lighting supplements the general lighting by two and three-light fixtures hung at 7 ft. over frames, stones, keyboards and casting machinery. Important work areas within the presses are supplied with fluorescent fixtures—such as under feeding and fountain areas.

1.—Composition and assembly section of the composing room. Seeability during day and night operation is assured. Each compositor is assured 100 footcandles illumination.

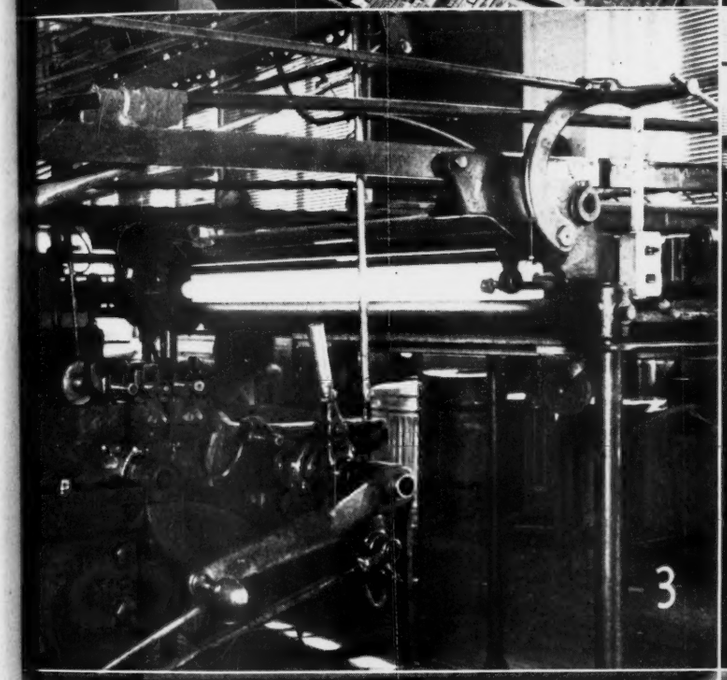
2.—Localized lighting, if it may be so termed, spreads illumination over the limited work area of this makeup table.

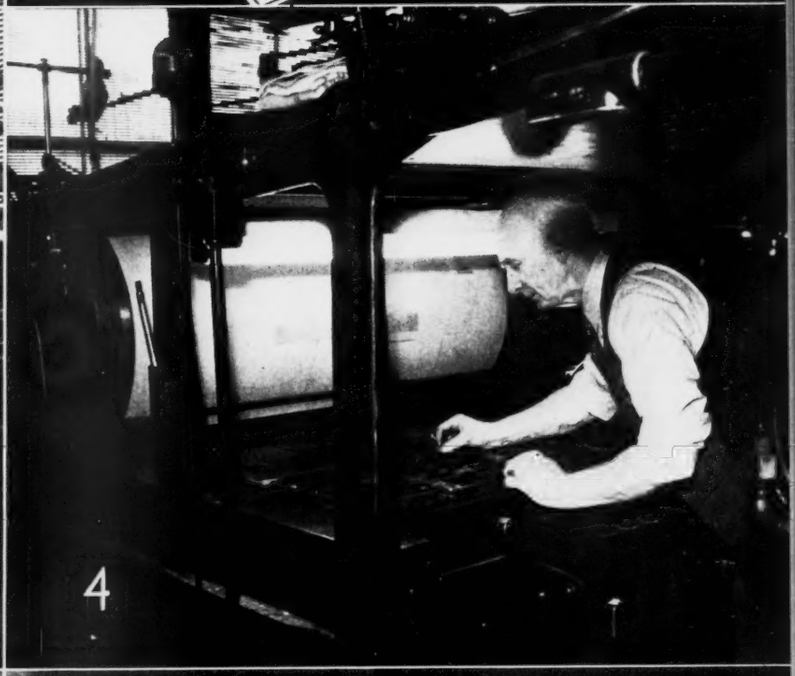
3.—View of section of Miehle No. 3 letterpress. Through a single-tube lamp nestled in a steel reflector, the ink fountain mechanism is visible to the pressman. Switch at right controls circuit for lamp which provides 40 footcandles.

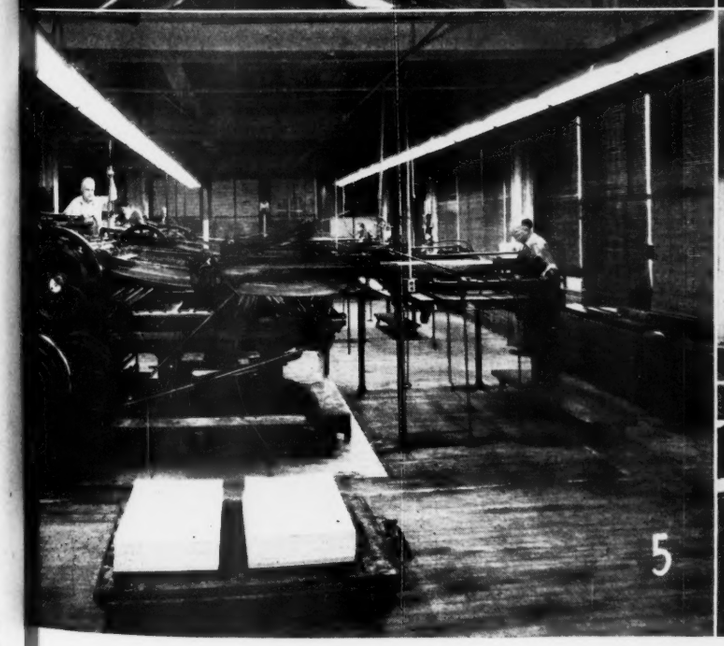
4.—The daylight fluorescent lamp fixtures attached to the underside of the press feedboard, through 40 footcandles, enables the pressman or makeup man to see all parts of the form clearly. Here, Pressroom Foreman Wm. J. Schneider shows how excellent illumination makes work easier and provides more efficient working means.

5.—Everyone should agree that this is an excellently lighted pressroom section.

6.—In the Feather bindery, from 45 to 60 footcandles are provided. General overall illumination, of this volume, according to lighting engineers, is sufficient to make bindery seeing tasks easy. Note the absence of shadows.







IN THE last century many years could be marked off as being historically important for outstanding developments and improvements in the art of printing. In the hundred years of printing history since 1846 much progress has been made, in fact, far more progress than occurred in the previous four hundred years following Johannes Gutenberg's invention of separate movable printing types.

The 100th Anniversary of the Hand Cut Overlay*

THE year 1846 is especially important historically to students of good printing, for in that year J. A. Adams of New York, N. Y., developed and introduced the use of hand cut overlays for securing better printing of wood cut illustrations.

Adams was a versatile individual. He was first a printer, then became a wood cut engraver. He was greatly interested in the then new art of electrotyping, and had several patents to his credit that were helpful in developing the electrotyping art.

As a wood cut engraver he had many disappointments in seeing his carefully engraved wood cuts poorly printed. The dark shades were often printed weak and broken and the light shades too dark. In some instances the thin lines would almost punch through the paper.

Previous to 1846, Adams had engraved 1600 wood cuts to be used in printing an illustrated Bible. He was affiliated with Harper Brothers, who incidently were all pressmen, and who built up the great publishing house that has been well and favorably known for over a hundred years.

The Harper Brothers, with the use of the biblical wood cuts engraved by Adams, planned to publish the most outstanding and profusely illustrated Bible ever printed.

The quality of the printing of the wood cut illustrations in the Bible was a matter of grave concern to the Harper Brothers and Adams.

Many discussions were held between the Harper Brothers and Adams about the printing of the Bible. Adams pleaded for full and complete authority to have it printed according to his own ideas.

At length an agreement was reached and put in writing and signed by the three Harper Brothers, giving Adams complete authority to supervise the printing of the Bible and have it executed according to his own ideas.

After the first forms were ready for the presses, Adams proceeded to the pressroom and worked with the pressmen in preparing the makeready for printing the wood cut illustrations. Hour after hour and day after day was spent in adding impressions to the dark shades and scraping and cutting down the impressions on the narrow and isolated lines of the wood cuts.

When two weeks had rolled by without any sheets being printed, the Harper Brothers became greatly concerned about the agreement they had made with Adams. They studied the agreement with the hope that they could find some basis for terminating it. Their examination of the agreement made it clear that they had given Adams full and complete authority for printing the Bible as he saw fit without any time limitation.

They entertained the hope that Adams would soon become tired of his fruitless efforts to find a better method of printing wood cut illustrations, and withdraw from the pressroom and thereby enable production to proceed.

Several days later Adams showed the Harper Brothers a printed sheet which was a revelation to them for the beauty and the quality of the printing of the illustrations. The light shades and vignetted edges were printed soft and delicate and the dark shades were printed smooth, dark and even.

In their labors, Adams and the pressmen had developed what later became known as the hand cut overlay, the use of which was responsible for bringing about a great improvement in the quality of the printing of wood cut illustrations.

The Harper Brothers were enthusiastic about the improved quality possibilities of printing wood cut illustrations better than any had ever been printed before. In their enthusiasm about the new improved method of printing wood cut illustrations they decided to increase the price at which their Illuminated Bible would be sold. The Bible contained 1283 pages. It was beautifully bound and had a picture of Trinity Church printed in gold leaf on the front cover.

In Adams' experimental make-ready work, he discovered that by adding several sheets of impressions on the dark shades of the illustrations and cutting the thin and separated lines out of a sheet or two, much better printing of the illustrations could be secured.

The first printing of the Illuminated Bible was done on a two-roller Adams press (the Adams press was invented by Isaac Adams in Boston in 1830.) The forms were triple rolled to insure good inking.

To secure better and more even ink distribution for printing the Illuminated Bible, six new Adams presses carrying six form rollers each, were ordered for its production.

The fine quality of the printing of the 1600 wood cut engravings in Harper's Illuminated Bible published in 1846 as a result of the development and use of the hand cut overlay developed by J. A. Adams, made the printing of this edition of the Bible a milestone in printing history. It was more profusely illustrated than any book or Bible previously printed. It marked the beginning of better printing of wood cut engravings in America, and led to the use of a greater number of illustrations.

Following Adams' development of the hand cut overlay, its use was gradually adopted in all the better printing plants of America. In some of the larger plants separate hand cut overlay departments were established where employees devoted all their time to the making of hand cut overlays for use in the makeready for printing wood cut illustrations and later for use in printing halftone cuts when they came into use around 1890.

For about fifty years the hand cut overlay was the only kind of overlay known and used. The first mechanically made overlay was introduced shortly before the turn of the century and at about the same time that the three and four color process work came into use.

So many kinds of mechanical overlay, which are practically the only ones now used, have been invented and introduced in the last 50 years that to tell about them would be a story in itself.

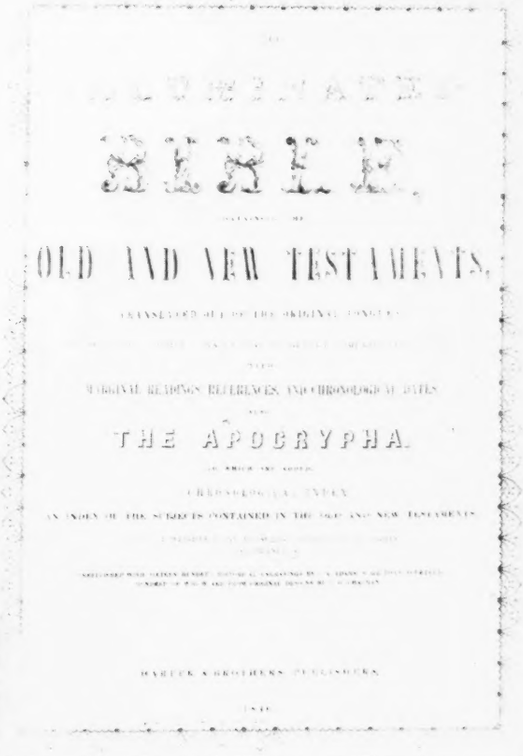
The many improvements made in printing presses and all the materials connected with press work have made it possible to considerably reduce the amount of overlay and makeready work necessary for good printing.

For the excellency of his work as a wood cut engraver and the important part he played in the improvement of the printing of illustrations, J. A. Adams earned a place in the history of printing where he will long be known and remembered.

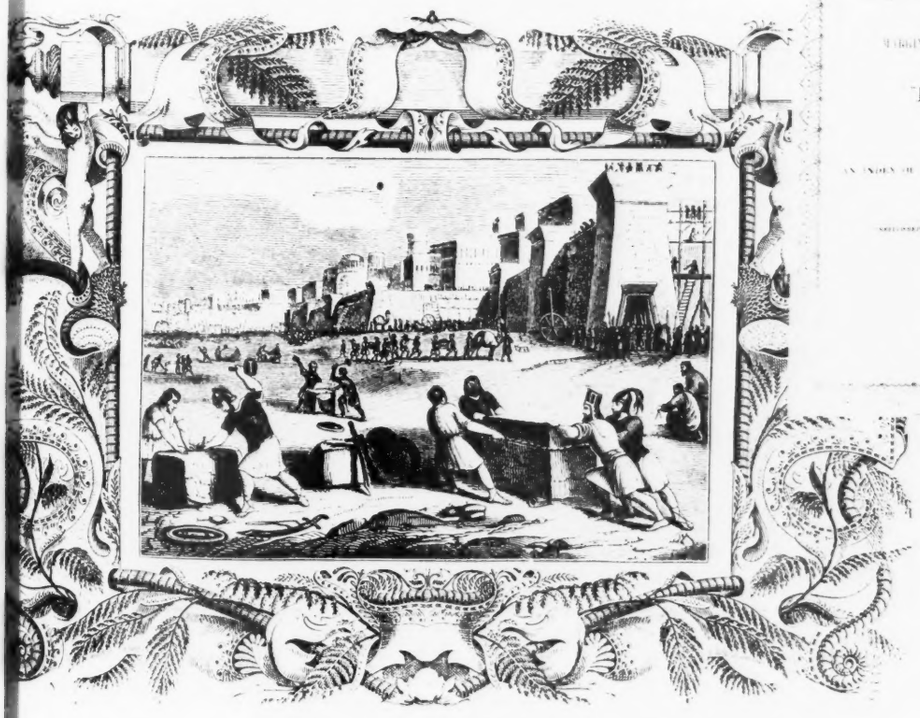
*By PERRY R. LONG, General Manager, Bryan-Brandenburg Co., Los Angeles, Calif.

Miniature view of Harper Brothers Illuminated Bible published in 1846. This was the first time hand cut overlays were used in printing. The overlay system was introduced by J. A. Adams. The Illuminated Bible contained 1283 pages and was beautifully bound. A picture of Trinity church was printed in gold leaf on the front cover.

Reduced photographic illustration of title page of the Harper Brothers' Illuminated Bible published in 1846.



Reduced reproduction of one of the many wood cut illustrations contained in the Harper Brothers' Illuminated Bible published in 1846. Printing of the wood cut surrounded by the filigree border was greatly improved as the result of Adams' hand cut overlay, as were the other illustrations in this Bible.



Press

designed for adding newspaper color printing equipment any time after installation.

By JOHN J. SWEENEY*

**Sales Engineer and Southeastern District Manager.*

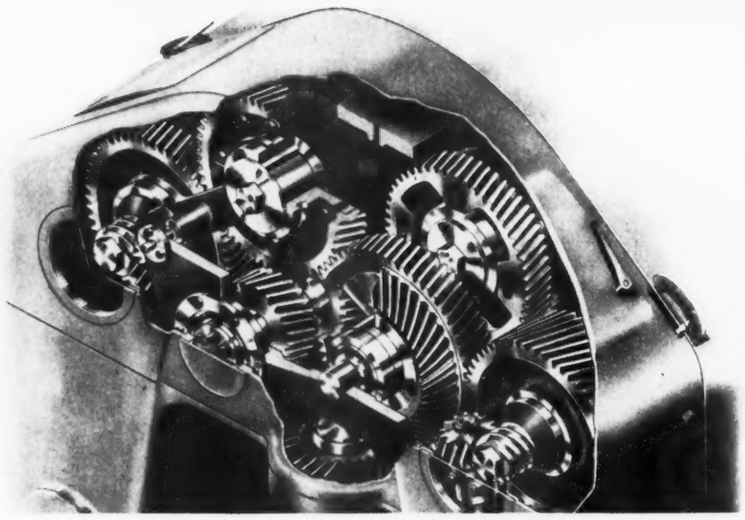


Fig. 1.—Isometric cut-away view of (Hoe Color-Convertible Newspaper Printing Press) showing the cylinder gearing as it appears in a press unit equipped with the parts necessary to reverse the left-hand couple.

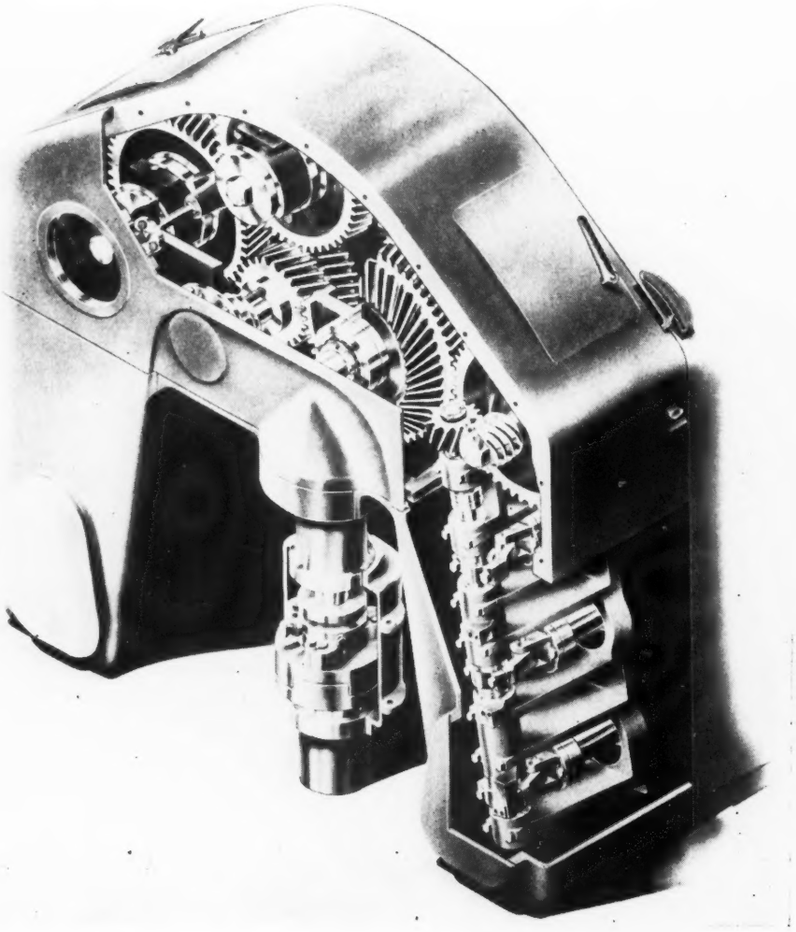


Fig. 2.—Isometric cut-away view (Hoe Color-Convertible Newspaper Printing Press) similar to the view shown in Fig. 1, with the cylinder gears in reverse position. The shifted impression cylinder gear is now in mesh with the rear non-slidable intermediate pinion, and the front adjustable pinion has been shifted back to engage the main drive gear.

THE new Hoe Streamline Newspaper Press Unit is designed for attachment of accessory color equipment at any time. A press composed of these Units may or may not be fitted with color attachments in the original installation; however, as needs arise it may be converted to color printing in varying degrees. A reversing mechanism may readily be added to the cylinder gear assembly to reverse one printing couple of a unit to receive the web from an adjacent unit; and a reversing mechanism may be placed in the main drive housing to make the entire unit reversible. A color plate cylinder may be imposed on any desired existing impression cylinder, duo-color ink pumps having ink pumps at both ends of a double rail can be installed where desired, ink pump drives can be reversed, and additional compensators may be added. All provisions for the required changes are incorporated in the casings of the Hoe Standard Streamline Unit regardless of whether the units are initially purchased for straight black or color work. Each unit is equipped with a web feeding-in pan to guide the sheet into the impression. The feeding-in pan is designed to allow either printing couple to be used as the first impression; and adjustable pipe rollers above the printing cylinders serve to register the web between impressions in either case.

Cylinder reversing mechanisms, which may be placed in a unit initially or easily added at a later date, consist of a yoke arrangement and collars for shifting the gears of the cylinders to be reversed, together with a shaft and pinions for completing the reverse drive. To reverse the printing couple, it is only necessary to remove a rectangular cover on the top side of the oil-tight housing, remove the spacer collars behind both cylinder gears, slide back the gears by means of the yoke screw, place the collars in front of the gears, and then finally, by means of another screw, shift the front pinion back to a point where it engages the spur gear attached to the driven bevel gear.

Normally, a *cylinder reversing mechanism* is placed at the *left-hand* printing couple. In some cases, because of the nature of

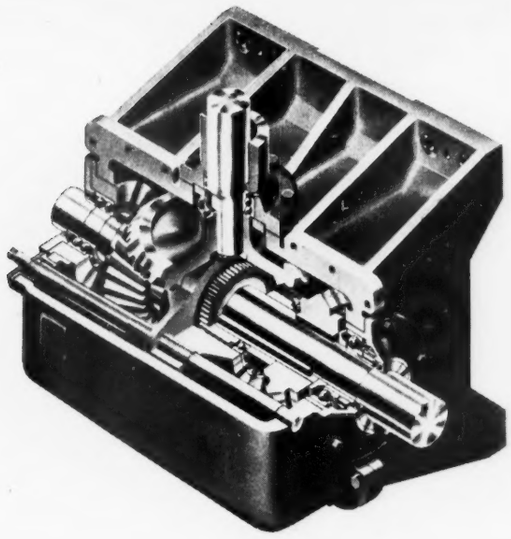


Fig. 3.—Cut-away photograph of the press unit reversing mechanism on Hoe Color - Convertible Newspaper Printing Press. Two bevel gears are keyed to main drive shaft by a sliding key. The lateral movement of these two bevel gears is controlled by a yoke actuated by a lead screw. To reverse the entire unit, the pressman need only crank the lead screw to its stop.

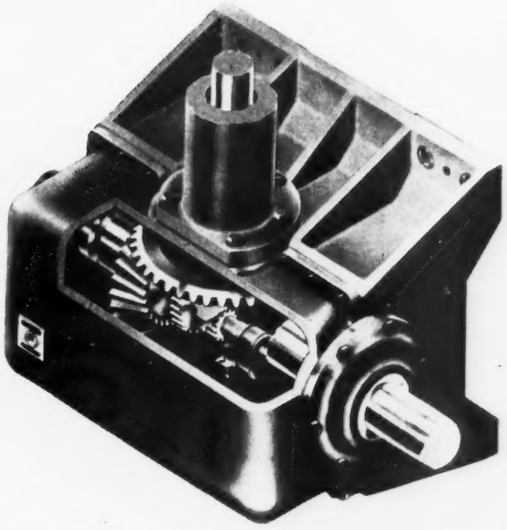


Fig. 4.—Cut-away illustration shows standard gear box without the reversing gear and yoke. Finished holes are provided to accommodate the reversing mechanism at a later date and are presently filled with dummy plugs. Main drive shaft cut away to show oil pump which lubricates entire printing unit.

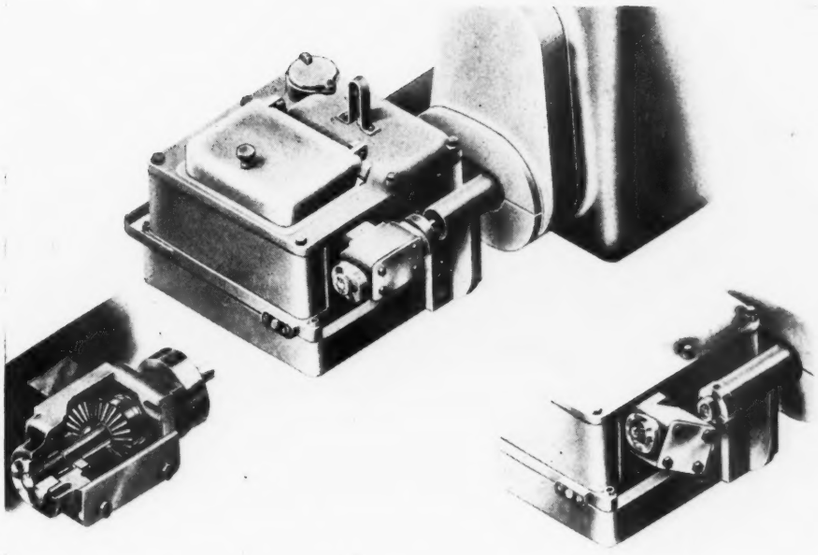


Fig. 5.—Oil-tight housings are provided at both ends of the printing unit with fittings designed to accommodate ink pump drives. Here is shown a new mechanism designed to reverse or silence the ink pump.

the leads desired, it becomes necessary to reverse the right-hand couple. This is accomplished by placing a reversing mechanism down at the main drive shaft where the bottom of the unit upright drive meshes, thereby reversing the entire unit. The left-hand couple is then returned to its proper direction of rotation by means of its *cylinder* reversing mechanism. The unit reversing mechanism consists of a gear box containing two opposing bevel gears keyed to the main drive shaft by a sliding key in such a way that either bevel gear can be meshed with the unit upright shaft drive gear. The movement of these two bevel gears is controlled by a sliding collar that can be actuated by a lead screw. Shimmed stops are provided to limit the movement of the sliding collar in either direction so that the bevel gears will always be meshed on their pitch lines when a stop is reached. To reverse the entire unit the pressman need only crank the lead screw to its stop. All standard unit gear boxes are provided with finished holes to accommodate the reversing mechanism parts and the holes are filled with dummy plugs when a reversing mechanism is not desired in the original installation. This gear box also contains the oil pump that lubricates the unit.

To further simplify the procedure of printing run-of-paper color on black units, Hoe engineers have expanded the application of the Hoe ink pump system. This regular black ink pump and rail consists of a pump box at one end of the rail and 32 copper tubes running through the rail, *i.e.*, one for each column. At the pump box each of these 32 tubes connects to an individual pump plunger which is adjustable by finger-tip control (outside of the press frames) to increase or decrease the quantity of ink to any column. The ink pump operates in keeping with every press speed and feeds the ink to the first ink drum in a protracted flow spread to an even film by the rail lip. The pump system always supplies fresh ink; and the knurled knobs controlling the separate plungers permit very fine ink flow adjustments. Full-page control knobs on the side of the pump box shut off the entire flow to any page or pages when running fractional rolls.

The new duo-color ink pump and rail was designed especially for run-of-paper color printing and allows the couple to which it is attached to print either black or color. It consists of a pump box at each end of the ink rail and 32 tubes from each pump, or two tubes to each page column—one from the black pump and one from the color pump. Normally, the black pumps are fed from a central ink supply tank; the color pumps, however, require a comparatively small supply of ink and are usually fed manually. The duo-color pump system greatly facilitates the use of black units for r.o.p. color printing and cuts to a minimum the clean-up time when a quick change-over is required. The system can be further enhanced by having a few extra pump boxes on hand for changes of color in any duo-rail as ink pump boxes are quickly removable to permit such substitution, and are in effect portable attachments which feed the ink under posi-

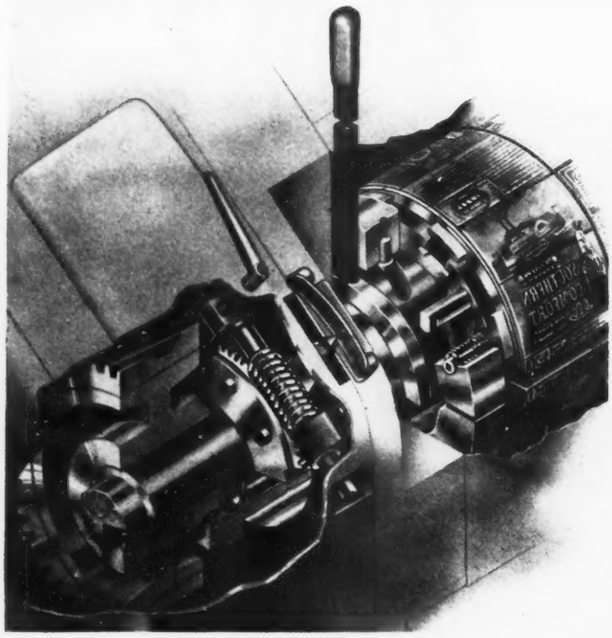


Fig. 6. — Cut-away view showing plate cylinder eccentric impression adjustment. Visual micrometer dial furnished over each impression eccentric. Also shown is four - clip plate lockup; outer clips can be adjusted individually at the end of cylinder by Allen screws.

tive control and under the same conditions as the normal means. New units originally installed with single pumps and rails may at any time be equipped with duo-color rails and pumps.

Advance planning has provided the oil-tight housings at both ends of the unit with fittings designed to accommodate ink pump drives. A mechanism has been designed to reverse or silence the ink pump. Silencing the pump is accomplished by merely disengaging the swivel joint by hand to put it out of operation when not needed. By turning the swivel joint through 180 deg. and reengaging it, the ink pump action is reversed. This is necessary to get the pump back to work in the proper direction after a unit has been reversed. It is also noteworthy that both pumps of a duo-rail can be operated at the same time—one supplying color ink to one portion of the cylinder, and the other supplying a different color or black ink to the remainder of the cylinder.

Many other new design features have been incorporated in the Hoe Streamline Color-Convertible Press. Some of these have a direct bearing on the color printing problem. Other features are the result of the effort to improve the

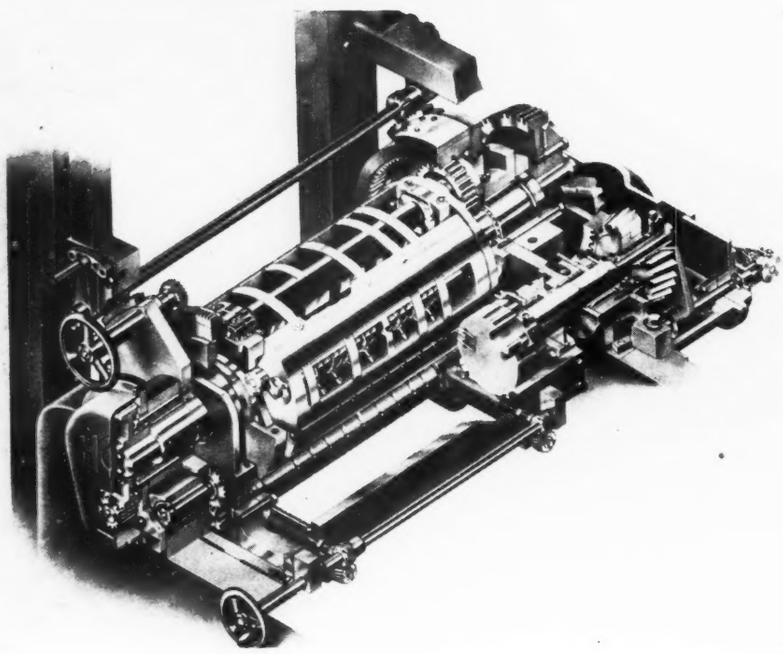


Fig. 7.—Cut-away illustration shows mechanical elements of Hoe improved folder for Color-Convertible Press. Lever at upper-left corner moves the two housing plates simultaneously to control the fold. When the folder is originally erected for a given press speed, the fold is centered for that speed and the lever is fitted in the center detent hole. There then is provision for two speed adjustments within practical limits in either direction—faster or slower. If the original setting is for maximum speed, then an end detent can be used and four lower speed settings provided. The handwheel just below the lever is used for moving the pin cam.

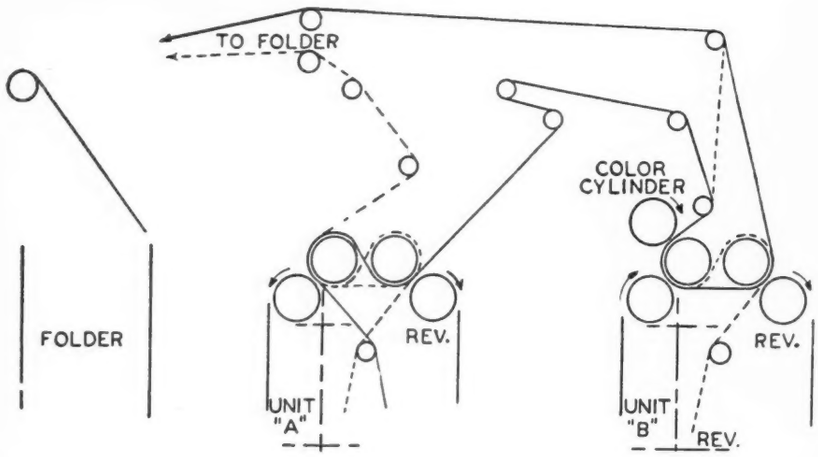


Fig. 9.—Diagram shows brake or operating side of the Hoe Color-Convertible Newspaper Printing Press, including the folder and units A and B. The driven gears are so arranged in the arch of the unit that unit A can receive the web from unit B by placing a cylinder reversing mechanism in the first impression couple of unit A. For greater flexibility, it is also desirable to have unit B fitted to receive the web from unit A, as shown by the solid lead lines. In order to accomplish the latter, both cylinder and unit reversing mechanisms must be placed in unit B as indicated in this diagram. By placing the color cylinder in the position shown, the widest variety of color placement for a single color cylinder can be obtained. The web can be run from unit B through unit A for a four-color printing on the outside or page 1 side of the web. The web can be run from unit A through unit B for a four-color printing on the inside or page 2 side of the web. Dotted lines indicate optional web leads.

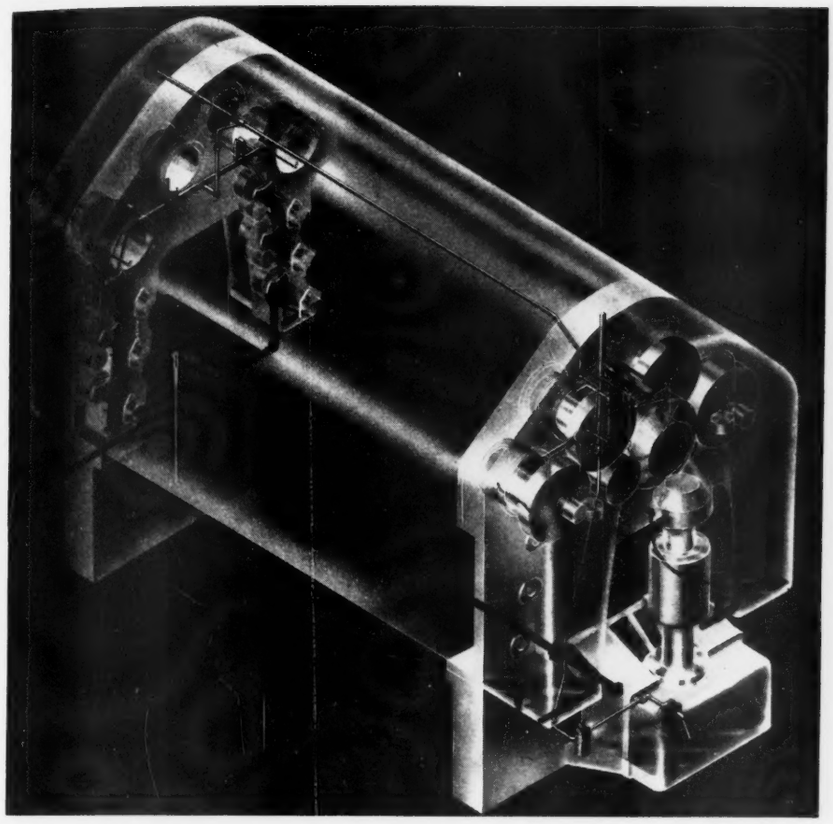


Fig. 8.—Phantom view of unit on Hoe Color-Convertible Newspaper Press. Shown are the forced feed lubricating system pipe lines and circulation. All gearing to be lubricated is shown in block formation. Oil is pumped from a reservoir in the main drive housing through a filter up to distribution points at both ends of the press.

printed product. The Instantaneous Plate Lock-Up has four clips for each plate as compared to three in the old lock-up. The clips can be adjusted for various plate widths by turning Allen screws on the outside of the cylinder ends. A special honing process developed during the war is now being used to insure a perfect, individual fitting of each clip in its clipway. Clips are 4 in. long and are accurately fitted on both sides as well as the top and bottom of the T slot. A single movement of a lever serves to unlock or lock the plates on the press. Although speed of operation is an important feature of this lock-up, its greatest value lies in uniformity of lock-up and correct spring pressure on the clips. The human element inherent in the old ratchet wrench type of lock-up has been removed and there is complete safety without buckling or springing plates.

The full-speed web splicing mechanism has an entirely automatic electrically operated auxiliary spindle brake tension superseding the previously manually controlled auxiliary tension, and the former hand lever on the web splicer has been replaced with an electric push-button control. An electric eye stops the new paper roll close to the expiring web when the reel is rotated at the start of the pastermaking cycle. The change from running belt to spindle tension preliminary to a web splice is now made automatically and with no change in web tension. This is very important in multi-color work since correct, uniform tension is necessary to good registration.

The Hoe folder design has also been improved. In addition to being streamlined in appearance to blend with that of the new units, it has several new features all its own. Each of the two cutting and folding mechanisms is now independently driven through separate vertical shafts with clutches to silence quickly either one, or to change from one delivery to the other. These clutches have shear pin members the same as used in the press unit drives. The entire folding cylinder and folding roller assemblies are mounted in two movable plates in such a way that a single adjustment changes the position of these mechanisms with respect to the cutting cylinder, changing the distance between the cutting line and the folding line to change the fold position and equalize it for various press speeds while the press is running, or when changing from light to heavy products. The folding blade assemblies are mounted in arms in such a manner that both folding blades may be adjusted in unison. There is also provision for adjusting the folding cylinder pin cam to change the timing of the pins, also while the press is running.

When the folder is originally erected for a given press speed, the fold is centered for that speed and the lever is fitted in the center detent hole. There then is provision for two speed adjustments within practical limits in either direction —faster or slower. If the original setting is for maximum speed, then an end detent can be used and four lower speed settings provided. A handwheel is provided for moving the pin cam. A fold adjustment usually requires a slight pin adjustment; and, in addition, pin adjustments and fold adjustments are often desired when changing from a light to a

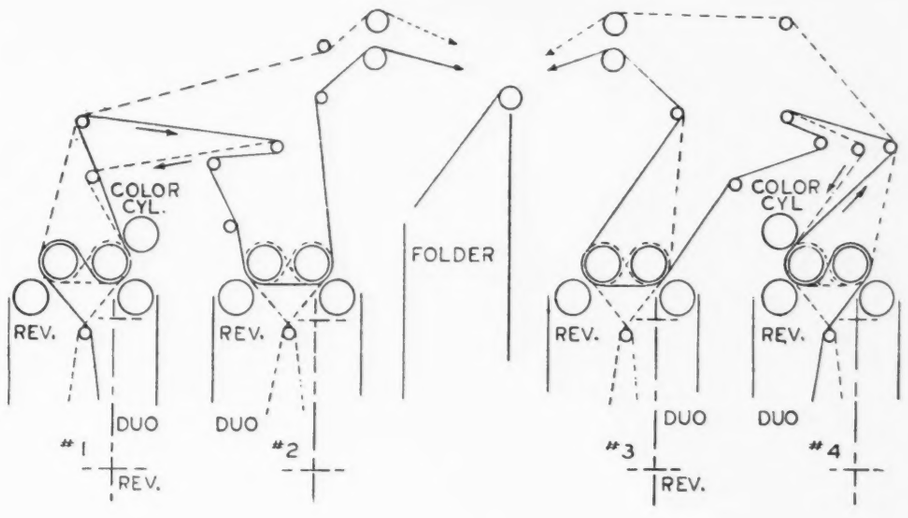


Fig. 10.—Diagrammatic representation of Hoe Ocutple Press shown in Fig. 10. Note color cylinder mounted on normal second impression of Unit No. 1 and on the normal first impression of Unit No. 4.

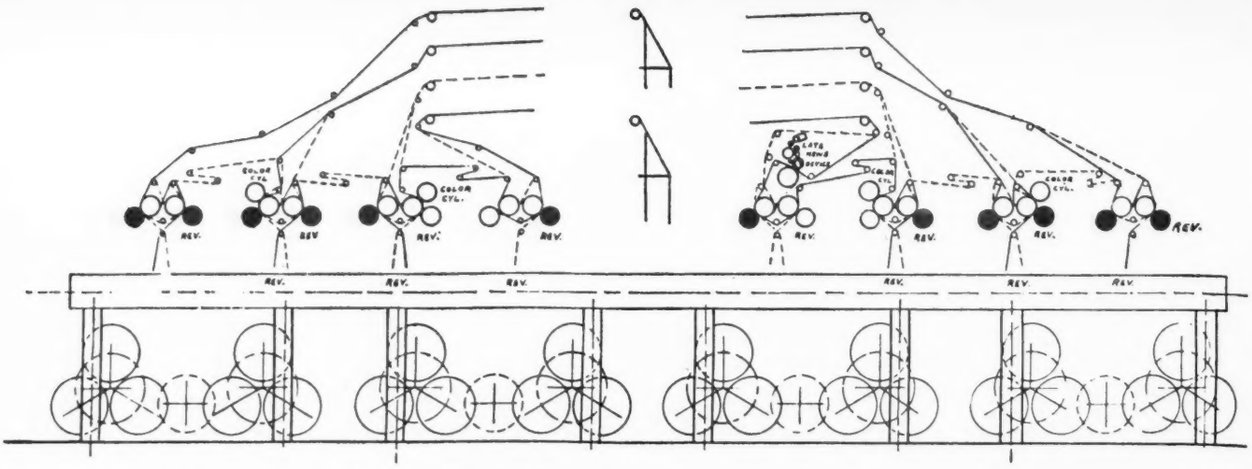


Fig. 11.—The color leads marked in the above diagram are those of a 48-page straight run paper with eight pages in full color (three colors and black) and eight pages in one color and black. This machine is a convertible unit-type of newspaper printing press pre-engineered and constructed so that additional color printing cylinders, reversible drives, etc., may be added either at the time it is built or at any future time after the initial installation is made. By reversing color leads and angle barring half webs, considerable flexibility for color page position is possible with the ability to maintain simple and direct leads. The following brief listing are some of the color possibilities inherent in presses of this type:

Straight Run Products

64 page paper with 16 pages in one color and black

56 page paper with 12 pages in one color and black and 4 pages in three colors and black

48 page paper with 8 pages in one color and black and 8 pages in three colors and black

40 page paper with 4 pages in one color and black 12 pages in three colors and black

32 page paper with 16 pages in three colors and black

Collect Run Products

Typical collect products may be run with the following combination of color pages:

80 pages (*Collect*)
- 24 pages with one color and black
- 8 pages with three colors and black
- 48 pages with black only

or

- 16 pages with one color and black
- 16 pages with three colors and black
- 48 pages with black only

or

- 8 pages with one color and black
- 24 pages with three colors and black
- 48 pages with black only

64 pages (*Collect*)
- 32 pages with three colors and black
- 32 pages with black only

heavy product or when running collect products.

Lubrication

The entire gearing on the printing unit is enclosed in oil-tight housings with forced feed lubrication. Oil is pumped from a reservoir in the main drive housing through a filter up to distribution points at both ends of the press unit from which it is fed to all gearing and bearings. The vibrating ink cylinders are lubricated by means of pipes which flow oil into a recess in each upper cylinder bushing. This oil overflows and runs into similar recesses in the lower bushings. Return piping sends the oil back to the main drive reservoir for re-circulation. The impression and type cylinder main bearings are lubricated by a constant flow of oil.

By imposing a color plate cylinder with ink motion on either one of the impression cylinders of the black unit, an additional single color printing can be made across the entire width on one side of a black perfected web, making a total of three impressions. If, however, a further mechanism is added to reverse one of the printing couples of this unit, it can then receive the web from the adjacent unit, thereby making possible a total of five printings on this web. With proper arrangement this will permit a four-color printing on one side of the web and the usual back printing on the other side.

We must keep in mind that the printing of four colors on a web requires the sacrifice of the page capacity of a unit. An octuple press with color cylinder when printing a four-color job is reduced in page capacity to that of a sextuple. Of course, when full page capacity is required and a unit cannot be spared for color, the color cylinder may be used for printing spot color on black pages.

Litho Club Meeting

The National Association of Litho Clubs will hold its second annual convention at the Gibson Hotel in Cincinnati, O., on Saturday, January 25, 1947. The Cincinnati Club will act as official host.

There will be a business meeting to elect officers for the next year. The present officers are: Alfred Rossetti, President; William J. Stevens, First Vice President; Clifford Hebbeler, Second Vice President; Albert Tucker, Treasurer; and Kenneth O. Bitter, Secretary.

Prominent speakers who will address the group are: Wade Griswold, Executive Director, Lithographic Technical Foundation; Walter E. Soderstrom, Executive Secretary, National Association of Photo-Lithographers; and Floyd Maxwell, Executive Director, Lithographers National Association.

Over 1000 men in the Lithographic Industry are already enrolled in the thirteen clubs in the United States.

The object of the organization is to set up educational functions, research, and dispense pertinent information to its members relating to the industry.

Foremanship Booklet

A 6-PAGE booklet entitled *A Report on Foremanship Attitudes* has been published by the National Foremen's Institute. Questionnaires were submitted to 1000 foremen in 20 industries. They were asked the question, "Which duties should be assigned to you so that you could do a better job?" The report lists their replies under four headings: the foreman's job; the foreman's aspirations; the foreman's requests; and, the foreman's profile. A copy of the report may be secured from National Foremen's Institute, Inc., Deep River, Conn.

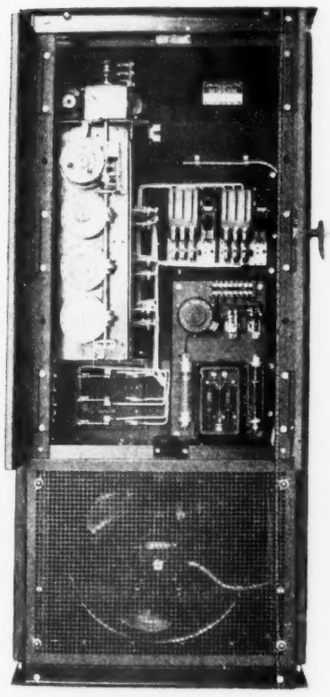
EQUIPMENT & SUPPLIES

Automatic a.c. Printing Press Control

A FULLY - AUTOMATIC printing press control for operation of newspaper presses has been announced by the General Electric Co. Composed of a unit substation, primary panel, and secondary cubicle, the control can be used with a.c. drives of 60 to 200 h.p. All functions of the control are selected by the operator from push-button stations in the press room.

The factory-wired unit substation contains the necessary transformer, circuit breakers, disconnect switches, and busses to supply the correct a.c. voltage to the drive system.

The primary panel dispatches power to the various units in the press-drive system in response to signals from the push buttons. In addition, it guards against overloads and overtemperatures in motors, stops the press if the web breaks, and operates cylinder brakes, drive brakes, and safety signal system. The panel contains a load ammeter, a special protective device to prevent accidental operation of the equipment when the panel is being tested, and selector switches for parallel, normal, emergency, and test operation.



View of General Electric's automatic a.c. printing press control.

The secondary cubicle regulates the speed of the press drive. It contains the special G-E cam switch which manufacturer states provides accurate speed control by regulating the amount of resistance in the secondary of the wound-rotor press-drive motor and coordinating the operation of the main and threading motors. It also contains the motor secondary resistors and a motor-operated fan for heat removal. All parts are protected in the totally-enclosed case. Accessibility is provided, however, by removable sides.

Additional information on the control is given in bulletin GEA 4473, which may be obtained from the General Electric Co. or *Printing Equipment Engineer* will forward your request.

Heribol Ink and Lacquer

HERBERT J. HERIBERT, Chemical Engineer, tells *Printing Equipment Engineer* that polyethylene resin was manufactured for the first time in England approximately five years ago by the I.C.I. Three years ago, polyethylene was produced in the United States by two companies. Since the development of polyethylene considerable work has been devoted to produce inks or lacquers for printing, marking, or coloring on polyethylene.

Heribol inks and lacquers are used for printing on polyethylene sheets, film, wires and tubes. Heribol, explains Dr. Heribert, is not one product, but is a series of items adjusted to the variety of polyethylene compounds, and to the equipment used in applying Heribol. Because of the necessity for adjustment, samples of polyethylene upon which matter is to be printed, marked or colored, are sent to Heribert's Laboratories so that the right Heribol is chosen. At the same time, the inquirer sends along information about the kind of processing that is used together with rough figures related to speed of production and temperature desired.

Heribert states eight different colors are now being run, but practically any color can be furnished if the demand warrants.

Further information may be secured from Herbert J. Heribert, Chemical Engineer, direct, or *Printing Equipment Engineer* will gladly forward your request.

Portable Electric Hoist

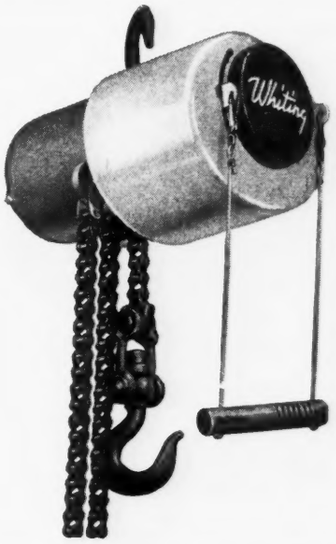
A LINE of roller-chain electric hoists of ¼, ½, and 1 T. capacity, has been announced by the Whiting Corp. The 1 T. hoist weighs 87 lbs.

The hoist utilizes a double-reduction, totally enclosed, worm-gear drive.

The hoist frame is a steel casting. Hence, the load is carried on steel from hook to hook, assuring safety. A self-energizing motor brake interlocks with the controller to provide safe operation. Upper and lower safety limit switches are provided.

The load hook has a universal action and swivels on ball bearings, which manufacturer claims prevents the roller chain from twisting. Control is by means of a single-bar grip, which can be operated by one hand, allowing the other hand to steady the load.

A feature of the Whiting hoist is that it can be operated in an inverted position.



Whiting Corporation's Portable Electric Hoist. The 1 T. hoist weighs 87 lbs.

This is an advantage where the overhead suspension point is high. Instead of carrying the hoist to the point of suspension, the cable is run out to the desired length, the hoist is turned upside down, and suspended from the hook. The load is then attached directly to the hoist. When operated in this manner, the hoist will literally "take the load in its teeth and pull itself up by its tail."

Bulletin H-100, describing the hoist, is available upon request to the Whiting Corp. or *Printing Equipment Engineer* will pass it along for you.

Hurleton Exposure Control

AMERICAN Type Founders, Inc., has announced acquisition of exclusive sales and distribution rights of the Hurletron Exposure Control, manufactured by the Electric Eye Equipment Co. The Hurletron instrument can be used in photo-mechanical processes such as gravure, photo-engraving and lithography for controlling exposures in cameras, vacuum frames, photo-composing machines, etc.

This is an electronic device which controls photographic exposures by continuously and automatically calculating the actual quantity of light which has fallen on the work during the course of an exposure.

If the intensity of illumination during exposure doubles, the exposure control halves the exposure time. If the intensity is cut in half, the contro doubles the

time. Other corrections for fluctuating intensity are made in proportion automatically.

Light sensitive materials used in photo-mechanical processes require an accurate exposure if uniform results are to be obtained. Factors that cause changes in light intensity are changes in line voltage, changes of lamp distance or changes in lamps.

Essentially, the exposure control consists of a light responsive photocell, which registers the amount of light falling on the work, coupled with an electronic measuring device which operates a recorder. This recorder is set by means of a dial comparable to the conventional timer. When the desired exposure has been recorded, the exposure is automatically terminated by the control which turns off the lights or closes the camera shutter as individual operations or will perform both operations simultaneously if desired.

View of the Olson Folding Machine, Model 23-C.

Olson Folding Machine

THE R. E. Olson Folding Machine Co. has developed a 15 in. by 21 in. folding machine called Model 23-C. The machine makes two parallel and three right-angle folds. The cross-carrier, which is a feature of the machine, has a hold-down that manufacturer claims grips and holds the sheets, regardless of folder speed. Manufacturer further states the steel core neoprene covered rollers give an average folding speed on 11 in. by 17 in. sheets, one parallel and one right angle fold, 10,000 per hr. This type of roller makes no knurl marks on the sheet. Feeding control is operated from either end of machine. Maximum sheet size using both parallel and right angle sections, 15½ in. by 22½ in. Maximum sheet size, parallel folds only, 15½ in. by 26 in. Minimum sheet size is 3 in. by 4 in., will fold down to ⅞ in. Equipped with variable speed control the maximum speed is 345 ft. per min. and the minimum is 157 ft. per min. Floor space required is 5 ft. by 7 ft. and weight is 800 lbs.

A 4-page illustrated folder, showing details of the machine, may be obtained from the R. E. Olson Machine Co. or *Printing Equipment Engineer* will pass your request along.

ATF's Book Edge Imprinter

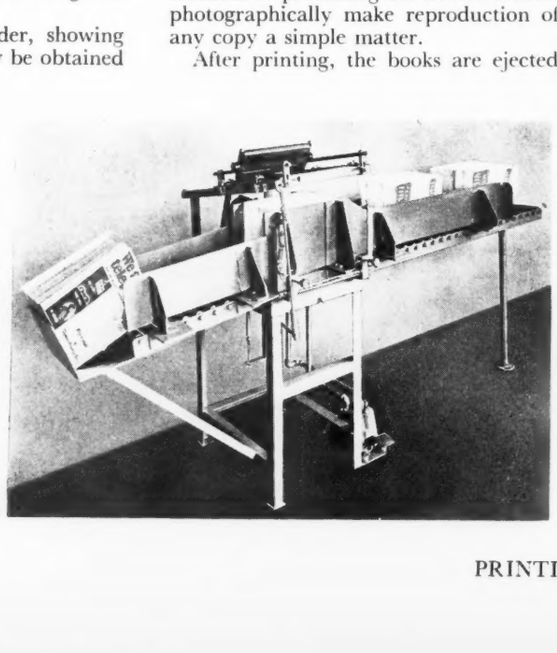
A SEMI-AUTOMATIC machine for imprinting alphabetical indexes or advertising on the edges of trimmed books has been announced by American Type Founders. The books are fed into the machine in sets, number per set depending upon the thickness of the individual books, and they are then advanced along a conveyor to the printing station. Steel plates, controlled by an air cylinder, compress the set of books to a fixed thickness so each group of books will always be the same thickness as the preceding group. This assures register in the printing operation that follows.

The printing is by the silk screen method because it gives the intense concentration of pigment required to obtain sharp impressions on the highly absorbent cut edges of the pages. Modern methods of processing silk screen stencils photographically make reproduction of any copy a simple matter.

After printing, the books are ejected to a trough from which they may be removed.

The operation of the machine is continuous, the books flowing from the receiving end to the printing stage and then to the delivery end. Production is limited only by the ability of the operating team to supply books to the machine and to remove the finished product.

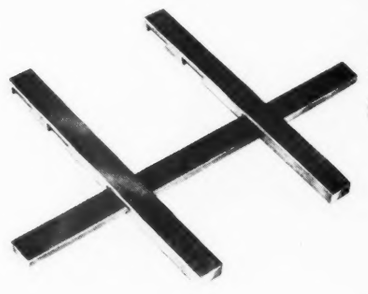
The new ATF machine can be used for perfect bound books or for hard bound books before they are rounded and cased-in. It provides a method for indexing medium to large catalogs, directories, and other books not requiring thumb slot indexes.



View of ATF's semi-automatic Book Edge Imprinter. Printing is by silk screen method. Imprints alphabetical indexes or advertising on edges of trimmed books.

Solock System Bars

SOLOCK System Bar sets consist of two steel vertical (notched) and one horizontal bar. They are adjustable to various lockup positions in the chases for Miehle Vertical, Little Giant and all platen presses. The idea is that the type form may be positioned in the chase and the bars placed in such position that the quoins will be locked between the type matter and the bars instead of next to the chase itself, thus avoiding the use of furniture. Manufacturer states that through the use of the Solock bars forms can be locked rigidly and without spring. Further information may be secured from the Harving Company direct or through *Printing Equipment Engineer*.



View of set of three Solock Bars which are used for locking type matter in chases for Miehle Vertical, Little Giant and all platen presses.

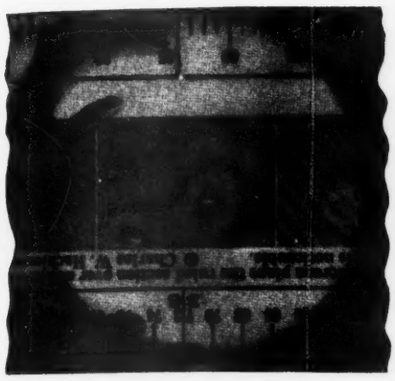
Welding Bulletin

ARC Welding At Lower Base Metal Temperatures is the title of a 4-page pamphlet issued by the Eutectic Welding Alloys Corp., to announce developments in metal arc electrodes. This illustrated booklet gives information on the development, advantages, applications, and data on flux-coated rods for arc welding all types of metals. Manufacturer claims these electrodes because of their flux-coatings can be applied at lower base metal temperatures than are ordinarily required.

Copies may be secured from the Eutectic Welding Alloys Corp., or *Printing Equipment Engineer* will forward it for you.

Halftone Screen Finder

COMMERCIAL Engraving Pub. Co. states its Practical Halftone Screen Finder is again available. The tool is now laminated on vinylite. On the Finder are shown nine most commonly used rulings: 60, 65, 85, 100, 110, 120,



133, 150 and 175 line. The Finder measures 2 in. by 10 in. by 0.030 in. clear laminated vinylite, polished. Also included on the instrument are agate, nonpareil and pica measures. To use, the Finder is laid over a printed middletone of the halftone, keeping it in close contact. By moving it up or down or by turning, one locates the section through the Finder in which no screen pattern or moire effect is noticeable. Further information about the Finder may be obtained from the company mentioned above, or *Printing Equipment Engineer* will pass along your request.

Controls Humidity Content of Paper in Plant

ONE of the difficulties in processing paper products has been the control of the humidity content of the paper to preserve workability characteristics. This problem exists in many letterpress and lithograph printing plants. It is reported that in tests recently conducted at the Lord Baltimore Press, Baltimore, Md., the use of a new material, Aquastop M-V-Bar, overcame the adverse conditions of humidity.

The material used in the tests is a form of Aquastop known as M-V-Bar. It is manufactured by Protective Coatings Corp., and is a synthetic impregnated, coated and chemically treated fabric which is flexible over a wide range of temperature conditions and which is both water and moisture-proof.

In the tests conducted by Lord Baltimore Press it is said the printed sheets, as received from the presses, are loaded on skid platforms upon which a sheet of M-V-Bar was first placed. When the load is completed, an envelope or prefabricated bag of M-V-Bar is inverted over the load. The edges of the bottom sheet on which the load rests are brought up and the envelope or bag drawn down over them. A temporary seal is then applied to hold the envelope or bag in place.

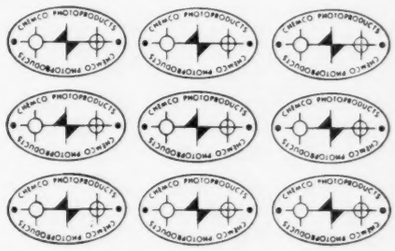
This procedure it is reported, resulted in maintaining the humidity content of the paper at a pre-determined level and kept the paper in proper condition for working over a five month period for both warehouse stock and material in process at the Lord Baltimore Press.

The manufacturers of Aquastop M-V-Bar state this material maintains its effectiveness at maximum relative humidity without cracking, tackiness, flow or loss of flexibility. Because of the strength of the base fabric, M-V-Bar has high resistance to scuffing and abrasion and may be used repeatedly without deterioration. Tests show that this material may be flexed a minimum of 135,000 times at 20 deg. below zero without cracking.

Self-Adhering Register Marks

CHEMCO Photoproducts recently announced at the Great Lakes Newspaper Mechanical Conference in Indianapolis the availability of transparent, self-adhering register marks for use on original copy, color transparencies, acetate flaps, masks, negatives, positives clear or stripping glass to provide registration indices for color plates—whether letterpress, offset or gravure.

Realizing the wide divergence of opinion in the Graphic Arts regarding the style of the perfect register mark, the Chemco device was designed with an eye to meet exacting requirements. The register mark actually is a combination of two accepted designs with the addition of a third calculated to end all arguments. All three are incorporated into one mark and used as such, or they may be separated and used singly, depending upon individual taste. It can be used by the artist, engraver, stereotyper and electrotyper.

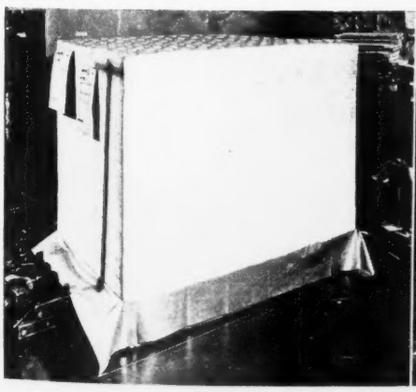


Section reproduction from acetate sheet containing 121 register marks. The sheet containing the marks was recently announced by Chemco Photo-products. The three types of marks were adopted to satisfy individual preferences. May be used by artist, photo-engraver, stereotyper and electrotyper.

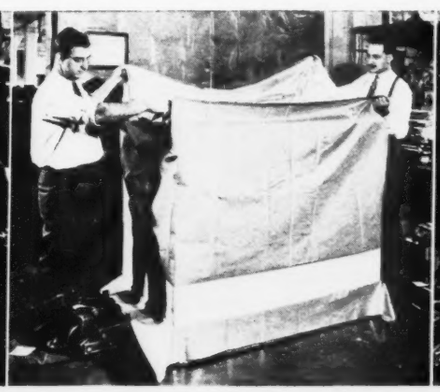
The artist or engraver cuts out a single mark from the large sheet. The mark is then placed in position, rubbed down firmly and it is stuck fast. No adhesive is used. There can be no smearing because the printing is on the other side and is protected by acetate.

The marks are supplied in three sizes (the smaller and larger sizes are still in production). The middle or most generally used size is available in sheets of 121 marks.

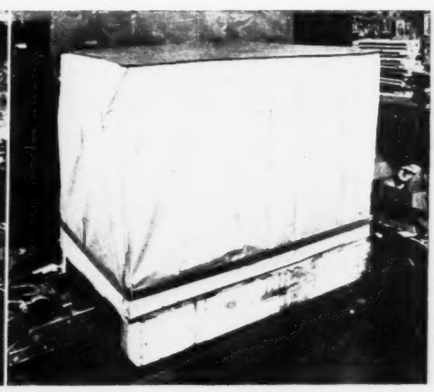
Letters, numbers, reference points and symbols are regularly supplied in the same material and are sold under the trade name Artype. Information and specimen charts will gladly be furnished through the Chicago and New Orleans Chemco offices.



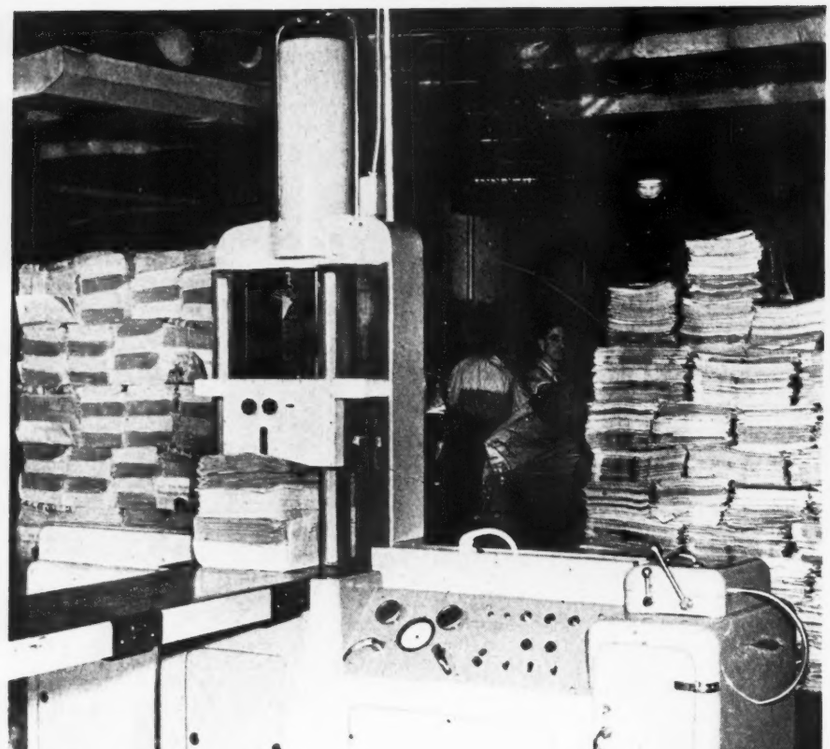
This illustration shows a skid of paper with a sheet of M-V-Bar moisture-proof material between skid platform and printed papers.



Placing pre-formed M-V-Bar envelope over loaded skid of printed paper, the extending edges of the bottom sheet will be drawn up and tucked inside the bottom edges of the preformed envelope.



Temporary seal has been completed, protecting load against moisture change for an indefinite period.



View of Wallastar Newspaper Bundler

Wallastar Newspaper Bundler

THE Toronto (Can.) *Star* announces completion of stream-lined design and manufacturing plans for the Wallastar Newspaper Bundler. By means of this machine, bundles of newspapers are lap-welded with wire automatically upon pushing a button. Capacity of the machine with respect to bundle sizes is as follows: Max., 14½ in. wide by 22 in. high; min., 10½ in. wide by 3½ in. high. J. S. Atkinson, production manager of the *Star*, states that the first of six machines now under construction is now in operation in the *Star's* mailing room. Plans are under way to build a limited number of these machines for delivery commencing about June 1947.

Operation of the machine is as follows: After the bundle has been placed underneath the pneumatically-operated overhead ram, an arm moves in from one side to align the stack of papers as the ram descends. Pressure of the ram on top of the bundle starts wire feeding from a coil. Wire runs through feed rolls and a wire-straightener, through a wire cutter and along a slot in the table under the bundle to a movable switch.

The switch on the left side and a cutter on the right of the bundle are movable longitudinally along the wire, their movement being controlled by the ram and the side arm in proportion to bundle size. The wire contacting the movable switch stops the feeding mechanism of the bundle, folding the cut ends of the wire upward. At the top of the bundle, auxiliary fingers fold the wire across through a slot in the ram on to a collapsible welding electrode. An upper electrode moves onward and down, lap-welding the wire electrically. An auxiliary plunger insures that the cut end of the top wire is forced down. The ram rises, the lower electrode collapses from under the wire, and papers expand against the welded wire tie.

Operation of the machine, with the exception of the wire feed motor, is electro-pneumatic. An air system using exhaust air from the operating stroke to return the pistons, saves about 40% of air normally required.

The wire used by the Wallastar bundler is soft-drawn copper-washed, 0.072 in. diam. This wire yields 72 ft. per lb. The enclosed swinging wire cupboard will take 150 lbs. coils. Time required for coil change is less than 1 min.

Specifications for the Wallastar Newspaper Bundler are as follows: Air required—50 cfm free air or less depending on bundle size. Air pressure—100 lbs. per sq. in. gauge. Motor—½ h.p., 110-220 v. Weight—3000 lbs. Length, 8 ft.; width, 2 ft. 8 in.; height 8 ft.; table height, 36 in.

Further information will be furnished by Toronto *Star*, or *Printing Equipment Engineer* will transmit your request.

Printing Rubber Folder

AN 8-page illustrated pamphlet, in black and color, has been published by the B. F. Goodrich Co. on printing rubbers for the Graphic Arts. Some of the subjects discussed in the publication are, essential factors in successful printing with rubber, engraving rubbers, unvulcanized printing rubbers and stamp gums. It also offers suggestions to users of vulcanizing compounds and a description of fabrics used with printing rubbers. Copies may be obtained from the B. F. Goodrich Co. or *Printing Equipment Engineer* will forward your request.

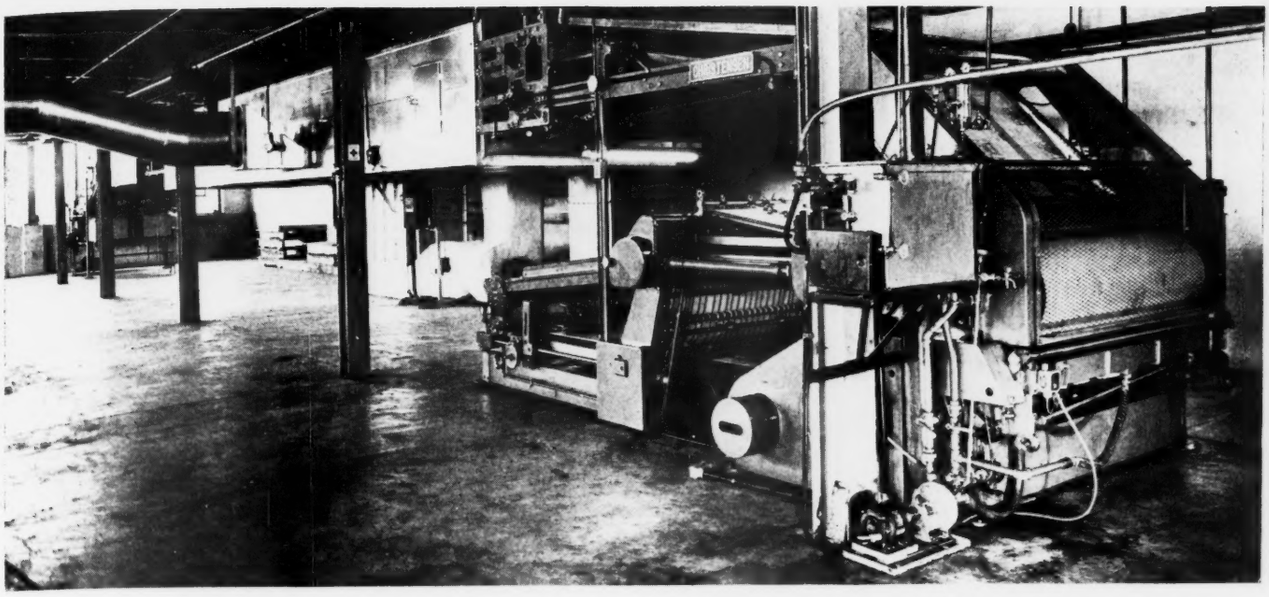
Booklet Available

THE Protectoseal Co. has published an 8-page illustrated two color booklet, of safety devices for reducing fire and explosions. The several types of safety cans offer safeguards from many dangers common in industry. The products shown in the booklet are oily waste cans and dispensing containers. Copies may be obtained from the Protectoseal Co. direct or *Printing Equipment Engineer* will pass along your request.

Shown above is the front cover of the safety products booklet.

Appoints Distributor

The California Ink Co., Inc., has been appointed exclusive sales agent for the Vulcan Proofing Co. for the Pacific coast, according to a recent announcement by Joseph C. Dunn, Vice President.



View from feeder end of Christensen Varnishing Machine. Machine is built in popular label sheet sizes for pressroom or finishing department handling varnishing work in volume. The oven through which the sheets are conveyed is visible just to the left of center.

Christensen Varnishing Machine

THE Christensen Varnishing Machine has been announced by the Dexter Folder Co. It is built in popular label sheet sizes for the pressroom or finishing department handling varnishing work in volume. For the present it will be offered in the following label sheet sizes: 42 in. by 54 in., 42 in. by 60 in., 52 in. by 72 in. and 52 in. by 78 in.

Company states that while no definite schedules have been prepared at present, it is expected that a number of machines will be manufactured and installed during 1947.

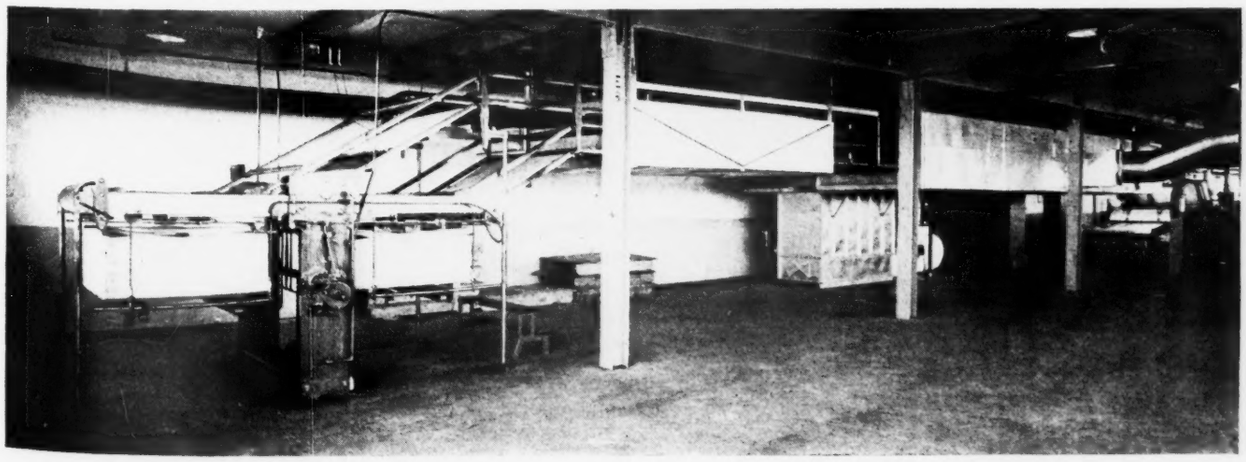
It is claimed that a high volume of production is attained because sheets are handled automatically and under positive control from the automatic feeder to the double delivery. (1) Sheets are fed and registered at front guides by either a pile or continuous type of stream feeder; (2) A feed-in cylinder takes the registered sheet from the front guides and transfers it to the varnish cylinder; (3) A dusting roll connected with an exhaust system removes any particles of dust or bronze powder from the sheet before it passes the varnish fountain roll; (4) Sheet is taken from varnish cylinder by a set of gripper bars and carried to the transfer device at the opening of the oven; (5) Sheets are transferred alternately to two sets of gripper bars, which convey them through the oven at one-half the varnishing speed; (6) The two sets of oven gripper bars carry sheets through a cooling zone and deposit them in the two deliveries.

A number of features have been introduced in the design of the Christensen Varnishing Machine. One of these is that the sheets are fed to front guides and are registered. If the sheet is in register, it is taken by the feed-in cylinder and transferred to the varnish cylinder. If the sheet is not in register, it is taken by the feed-in cylinder and does not transfer but is delivered by the feed-in cylinder into a tray beneath the feeder conveyor. When this occurs, the varnish roller is tripped automatically to prevent coating of the varnish cylinder. Thus production loss is limited to the sheets not in register at the front guides. By this method of tripping, the machine continues to operate and takes the next sheet fed. The transfer and varnish rollers are tripped automatically as any sheet not in register passes through to the reject tray.

An important feature of the Christensen Varnishing Machine is an encased cleaning or dusting roller which is connected with an exhauster. The dusting roller cleans the sheet of dust or bronze particles before varnish is applied.

Another feature of the machine is that sheets are conveyed through oven in two paths at half the speed at which they are varnished. This holds the oven length to the same as would be required at one-half the operating speed. This is accomplished through the use of a transfer de-

View from delivery end of Christensen Varnishing Machine. After being conveyed through the oven, the sheets are air-cooled before being deposited alternately in one of the two deliveries shown at the left. Production ranges from 4000 to 5000 sheets per hr. dependent upon condition of the stock.



vice that transfers sheets arriving at the oven to two sets of gripper bars which travel at one-half the surface speed at which sheets are varnished. Sheets are carried through the oven in two planes—one above the other. Hot air is blown on each line of sheets through separate air ducts and exhausts from the bottom of the oven.

After passing through the oven, the moving conveyor exposes the sheets to open air for a distance of about 32 ft. to cool them.

The two conveyors (gripper bars) then deposit the cooled sheets in two deliveries containing the jogged piles of sheets.

The Christensen continuous stream feeder or the Christensen pile stream feeder can be supplied with the varnishing machine. The continuous type is recommended to obtain maximum production on all stock up to 10 pt. card.

The fountain can be moved out of operating position for cleaning and setting of dry-strip wipers. The varnish roll can be raised on hinged arms and washed without removing it from the fountain. Settings of varnish and cut-off roll for amount of varnish can be made while the machine is in operation. A small motor is provided to operate varnish roll when out of operating position to prevent varnish from drying on the roll. Varnish is pumped into fountain from a supply tank. A heating unit for the auxiliary varnish tank can be supplied.

Drying ovens can be supplied for use with gas, oil or steam and are equipped with safe controls. Anti-friction bearings are used extensively. Cylinders and drive shafts are mounted in roller bearings. The Christensen Varnisher is sold as a complete unit with feeder, varnisher, ovens and delivery.

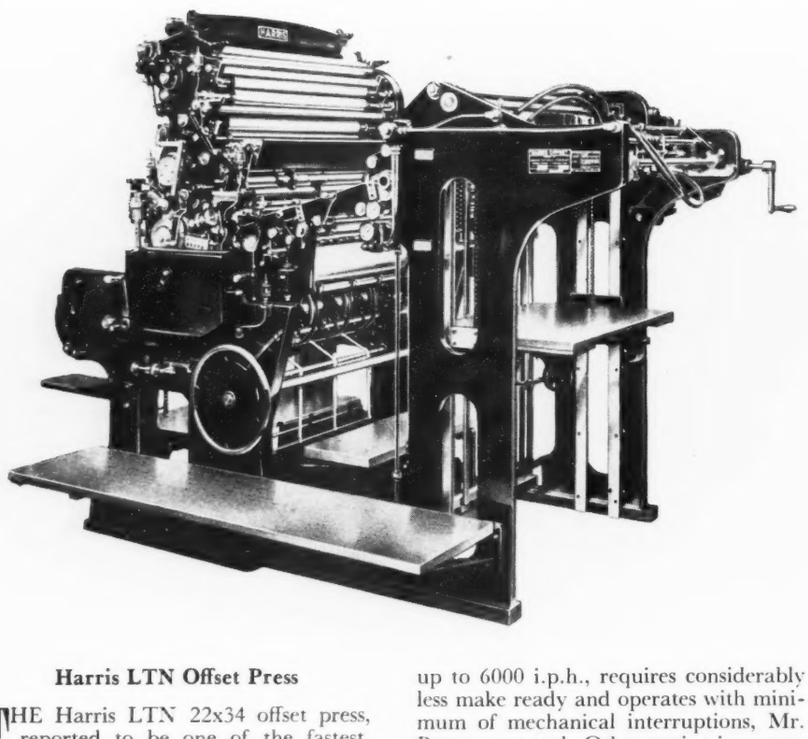
Electrical Data—Motors: 7½ h.p. for driving complete machine; 5 or 7½ h.p. (depending on machine size) for driving hot air supply fan. 3 h.p. for driving exhaust fan; 1 h.p. for driving safety draft fan for gas heater; ½ h.p. for driving fountain roll when fountain is in inoperative position; ½ h.p. for driving varnish pump which supplies varnish to fountain; 2 h.p. for driving air pump on feeder; 1 h.p. for driving vacuum pump for deliveries.

All motors and push button stations are of the Nema class 7 type commonly called explosion-proof. All controls and starters are contained in a Unitrol cabinet, wired and ready for connection to lines and motors.

Production per hour depends upon condition of stock.

Further information may be obtained by getting in touch with the Dexter Folder Co., direct, or *Printing Equipment Engineer* will gladly pass along your request.

Size	*Overall Length*	*Width*	*Geared to Run*
42 in. by 54 in.	89 ft. 4 in.	7 ft. 6 in.	5000 per hr.
42 in. by 60 in.	89 ft. 4 in.	8 ft.	4500 per hr.
52 in. by 72 in.	90 ft. 4 in.	9 ft.	4000 per hr.
52 in. by 78 in.	90 ft. 4 in.	9 ft. 6 in.	4000 per hr.



Harris LTN Offset Press

THE Harris LTN 22x34 offset press, reported to be one of the fastest, quietest, smoothest running presses ever manufactured, has been announced by the Harris-Seybold Co. The new single color offset, according to H. A. Porter, vice president in charge of sales, incorporates many design features that heretofore have not been available in a press of this size.

Supplanting the Model EL in the Harris line, the LTN is capable of speeds up to 6000 i.p.h., requires considerably less make ready and operates with minimum of mechanical interruptions, Mr. Porter reported. Other major improvements over pre-war models include steam feeding, more positive register, controlled ink coverage, and convenient servicing, it was said.

More efficient ink distribution on the 22x34 press has been accomplished by a newly designed inker, utilizing five strategically located vibrator rollers of smaller diameter than the conventional type. The inking mechanism of the press has been further improved, according to Mr. Porter, by variable friction drive water pan roller, and the installation of an ink fountain requiring no agitator mechamism.

More positive register has been made possible by individual two-sheet calipers installed at each side of the sheet and a new side guide adjustment which can be operated while the press is running. This model, like all new Harris presses, is equipped with three point registering mechanism. In addition, micrometer adjustments have been installed for the front stops, which carry the sheet detector, and for the blanket cylinder so that the operator may quickly and easily adjust for thickness of paper to be run.

Feeding and delivery mechanisms on the new press have been improved greatly, according to Mr. Porter. The operator can adjust the feeder quickly and easily for varying sheet sizes, and a new pile board lift enables him to pile stock on a second board placed in the feeder while the press is running and paper is being fed from the top board.

Variable speed power mechanisms for raising and lowering pile boards have been installed at both the feeder and delivery ends, in addition to variable speed hand lowering and raising devices. Another delivery feature is a new back jogger which can be adjusted while the press is running.

Other Harris presses scheduled to reach the industry in 1947 are the improved commercial 17x22 single color, and the 42x58 in single, two, and four-color models, Mr. Porter stated.

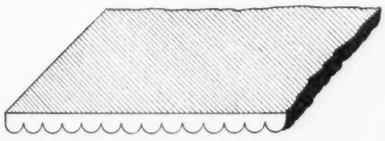
Trivision

which furnishes third dimension or depth perception, said to be developed — Bausch & Lomb make lens for Trivision's inventor, Douglas F. Winnek — Photo-engraving and lithographic processes worked out

ONE of the most interesting jobs undertaken recently by Bausch & Lomb Optical Co. is production of a fast Balcoted lens for a three-dimensional photographic process invented by Douglas F. Winnek, University of Rochester-trained optics engineer.

Winnek's picture - taking method, known as Trivision, was developed after several years' experimental work. Those viewing his pictures find it difficult to believe their eyes, so true to life is their depth. His photographs are taken with a single lens and do not require the aid of viewing glasses to bring out their depth or relief.

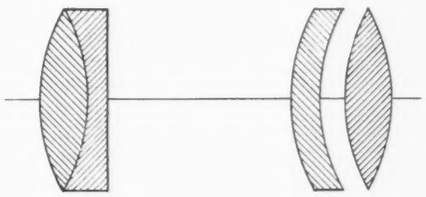
The lens is a 14½ in., f:2.2 portrait-type. In size, it closely resembles the headlight on a locomotive, measuring 8 in. diam. when mounted. One factor in the success of the picture-taking process is the lens' large diameter. Winnek maintains that a camera lens, like human vision, can see partly around any object. Thus, the wider the lens, the better the depth perception.



Enlarged diagrammatic sectional view (not to scale) of film employed in the Winnek Trivision photographic process. The upper surface of the film carries the emulsion. The side opposite is embossed with 200 plano-convex cylindrical lenses per linear inch.

The possibilities opened up by Trivision are great. Its inventor says additional work is under way to adapt it to lithographs for use on billboards. Not only in portraiture, but in aerial reconnaissance, motion pictures, X-ray and clinical work will the effects be of great value.

Governmental recognition of the value of Winnek's idea was granted early in the war and much progress toward its perfection came about through special grants of money and facilities. The Navy spent about one million dollars developing the process and also worked out a photo-engraving process to pick up the depth perception of the Trivision camera. Latest version of the camera was built by the Aero Photographic Experimental Laboratory, Philadelphia Navy Yard.



Cross-section diagrammatic view (not to scale) of Winnek Trivision lens. It is an f:2.2 Petzval portrait-type objective—a compound lens made up of four elements as shown. This Balcoted lens is made by Bausch & Lomb. The term "Balcoted" refers to the application of Balcote, Bausch & Lomb's term for a metallic fluoride light transmission coating, the use of which is said to increase light transmission 30 per cent. The mounted lens is 8 in. diam. The two left-hand elements are cemented together.

Trivision's inventor points out that this property of a lens is wasted in an ordinary camera because all the light reflections focus on a flat surface. This is actually the remainder of Winnek's secret for he devised a method of embossing any standard film, black and white or color, on the side opposite the emulsion, with microscopically small ridges or lenticulations.

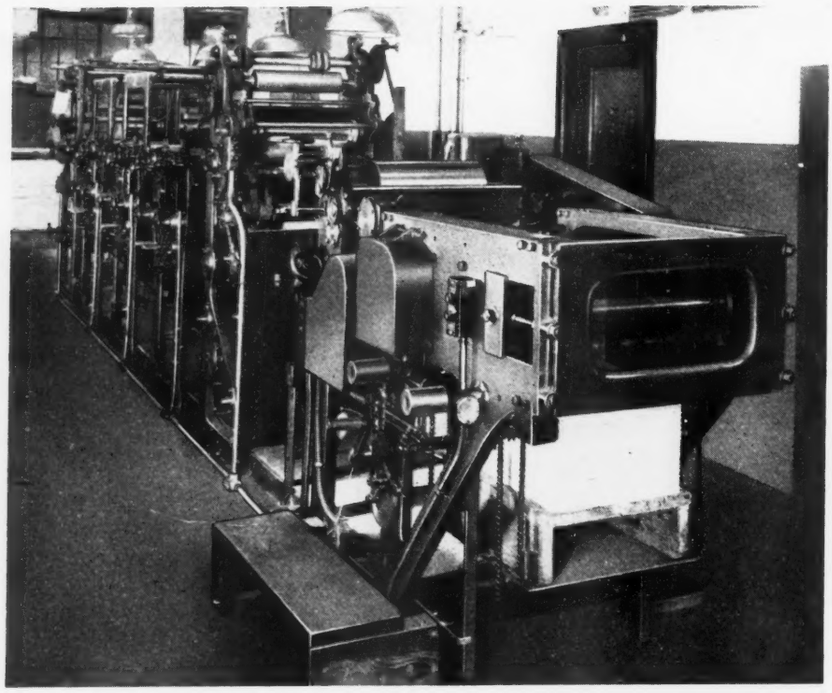
These ridges take the shape of simple plano convex cylindrical lenses numbering about 200 per linear inch. Each tiny ridge acts as a separate miniature lens and divides its portion of the image into two parts. In other words, the film is converted into an optical surface which supplements the action of the large Bausch & Lomb lens.

To obtain maximum depth or relief, the camera is designed so that it moves across or scans the subject laterally. The film, too, is moved during exposures. It all sounds complicated and it is, but the results are something at which to marvel. When you view an ordinary portrait for instance, it looks the same whether you stand directly in front of it or off to one side. Not so with Trivision pictures which provide an astonishing sense of depth. It is actually possible to see around and beyond objects as you change your position or angle of view.

For example, objects in the foreground appear to move in relation to objects in the background. Foreground objects also appear to project out in front of the photograph or mount itself. If a pencil point is placed on an object in the picture, such as the center of a flower, the flower appears to project out and beyond the pencil point.

The young and stocky optics engineer, who visited Bausch & Lomb in search of a lens that could meet requirements for the Trivision camera, reportedly has sold an option on movie rights. Manufacturers wishing to know about licenses have besieged him with inquiries.

Trivision Eye — Allan Murray, Bausch & Lomb Optical Co. Scientific Bureau, exhibits a replica of the fast portrait-type lens used for taking Winnek Trivision photographs which show startling depth. The lens measures 8 in. diam.



View of Dutro Photo-chrome Relief Offset Press—Designed by Orville Dutro & Son and built by Joshua Hendy Iron Works. Prints on one or both sides of web in color.

Announce Two Offset Presses

TWO new presses are making their initial bow to the trade with this issue of *Printing Equipment Engineer*—The Dutro Photo-chrome Relief Offset Press and the Dutro Automatic Web Offset Press. For many years, Orville Dutro, and in recent years, Orville Dutro and Son, have devoted their time to the design of printing equipment for specialty printing firms. Orville Dutro & Son now announce that recent arrangements will make some of these presses available to the trade.

Both Orville Dutro and his son, Lyle Dutro, have learned printing presses the hard way, discovering the things that make presses "tick" by working long hours after closing time. Both believe that a printing machine should respond to the touch of a button and have designed adjustments and operating controls accordingly.

Orville Dutro is experienced as a printer, pressman, photo-engraver and lithographer, and is head of the printing press engineering firm bearing his name. His son, Lyle, has been reared in an atmosphere of printing machinery and handles some of the most intricate designs. They have designed letterpress, offset, relief offset, rotogravure and aniline presses. These presses have been used for salesbook, carbon-ready, labels, wrappers, publications and general utility jobs.

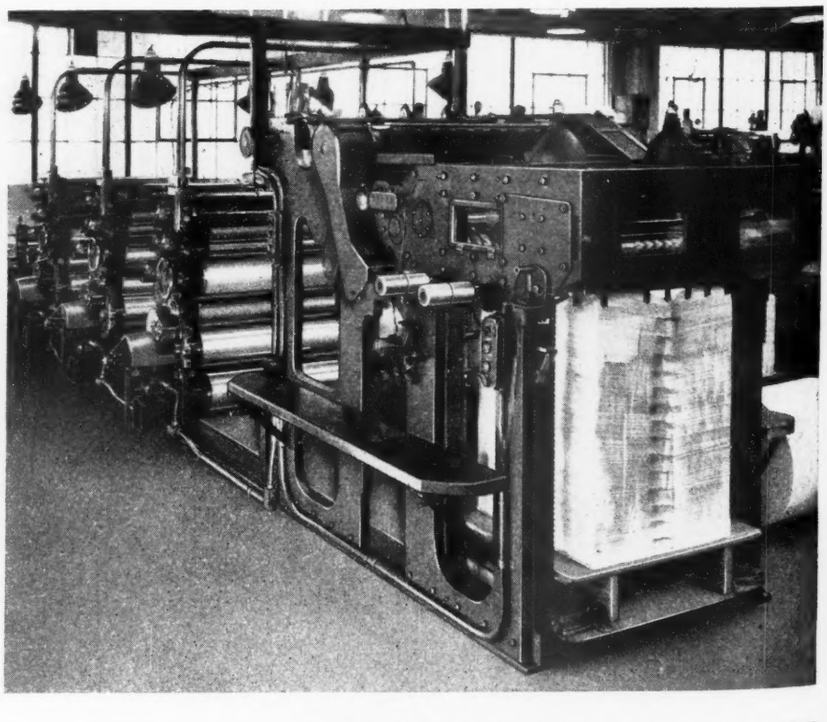
The Dutro Photo-chrome Relief Offset Unit-Type Press, sponsor states, will print on one or both sides of the web or on 1, 2 or 3 webs at 15,000 press revolutions per hour—15,000 per hour 17x22 sheets printed in 6 colors, or 45,000 per hour 17x22 sheets printed in 2 colors on 1 side. The machine can be built for colors or combinations to meet the requirements of a particular line. Further features mentioned by designer are that the press is equipped with automatic tension, infeed rolls, auxiliary unit with cross and rotary perforation and rubber plate strike-in cylinders. It is equipped with receding pile delivery which automatically lowers for any thickness of paper from tissue to light-weight tag; plates are pre-registered.

According to Mr. Dutro, the Photo-chrome Press possesses some unusual features. For example, he states this press has repeatedly made runs up to four and five million impressions from a single set of plates, and points out that over a long period of use, average makeready time on this press for six closely registered colors has been between two and three hours. The name Photo-chrome was given to this process—commonly known among printers as dry offset, or more correctly known as relief offset—because it is a colorful photographic process. It lends itself to many techniques—combinations of oil and water color ink, flat colors, process colors, Ben Days and fine lines which resemble etchings. It is claimed to produce printing on all types of paper from the roughest to the smoothest finishes, including gummed paper since no moisture is used on the press. At 15,000 per hour, it is asserted that the work is delivered on a platform which can be hauled out of the press with a lift truck.

The Dutro Automatic Web Offset Press is intended for publication and newspaper printing, including the country newspaper. Mr. Dutro also feels the press has something to offer to the metropolitan daily. It is possible to have the press equipped with both a folder and a pile delivery so that a publication which could not otherwise utilize the full time of the press can fill in the time with a variety of job printing.

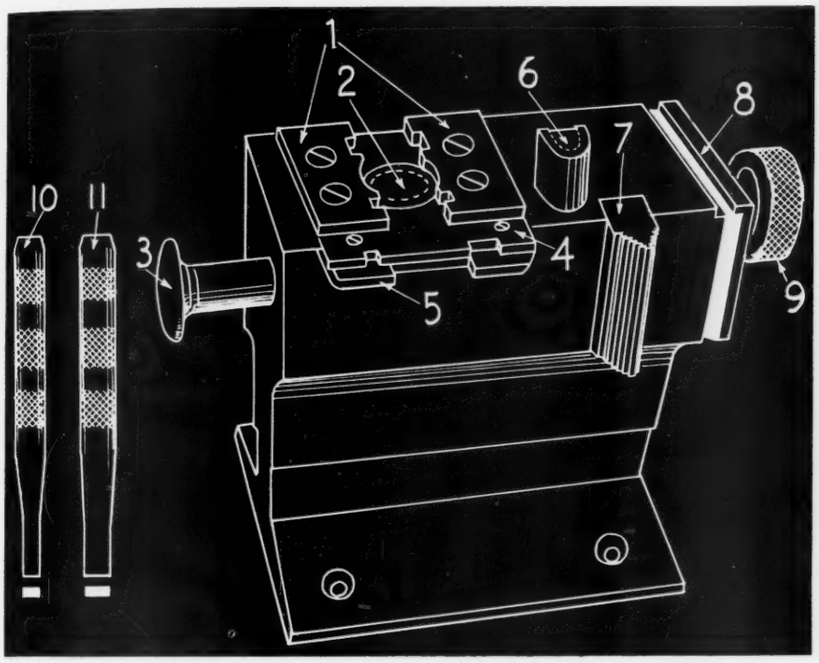
The Dutro Automatic Web Offset Press also announced, is available in three sizes—33x28, 33x45 and 28x34. This unit-type press, it is stated by Dutro, can be built for any number of colors and for front and back-side printing. For maga-

View of Dutro Automatic Web Offset Press intended for publication and newspaper printing. Available in three sizes—33x28, 33x45 and 28x34. Unit type press supplied for printing any number of colors.



zine and newspaper publication printing, the press is 33x45 equipped with a folder and operates at 12,000 to 15,000 per hour. A 2-unit press can deliver an 8 page newspaper in one color. A 4-unit press can deliver an 8 page newspaper in 3 colors on one side and 2 colors on reverse side, or a 16 page section with 4 pages in 2 colors and the remaining pages in one color. For tabloid sizes, the number of pages would be doubled. With a magazine folder, many combinations and sizes can be produced. The press may be used also for printing many types of commercial work when not busy with publication printing. Other operations, such as punching. perforating, numbering, gathering and pasting, can be included. Sponsor also announces that it is possible to dry the ink so thoroughly that work can be varnished and bronzed in one operation.

When the war was over Mr. Dutro made connections with the Joshua Hendy Iron Works of Sunnyvale and Torrance, Calif. for the production of machines. Hendy has made its facilities available for the production of Dutro designed printing equipment. Hendy is said to be the largest machine shop in California.



Matrix Maintenance Tool Assembly Has New Twist

THE line-casting machinist must always watch those parts of the machine which may cause wear on matrix lugs and combination teeth. During the war years it became necessary for him to maintain machines in best possible condition in order to reduce parts replacement. The reason for the necessity of obtaining maximum use from machine parts is that it is not only good housekeeping, but replacement parts were not always obtainable on short notice.

Harvey R. Capps, sr., Chief Machinist of the Jacksonville (Fla.) *Times-Union*, got together in one assembly the tools and gauges which are essential in restoring damaged and/or matrices to working condition. The halftone illustration shows a wooden tray for containing the tools and gauges. The line drawing shows construction of the main repair block. The outfit was constructed and assembled in the *Times-Union's* workshop.

In the diagrammatic drawing, the upper section of the main block was machined from cold pressed steel and is 2 in. by 2 in. by 4½ in. size. This block was welded to a 4½ in. section of passenger elevator track.

The matrix former dies *1* are of carbon steel accurately machined to fit the lugs of a new matrix and are hardened.

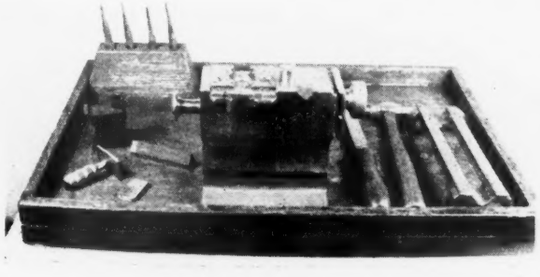
The block is fitted with a matrix ejector plunger *2* which is operated by a light push on the ejector operating knob *3*.

The flat gauge *4* is used for testing the spacing as well as the dimensions of the upper and lower lugs. The gauge *5* is used for checking the width of the matrix across the body.

The anvil *6* is used for straightening burred or bent combination teeth. Its general contour conforms to the matrix tooth recess.

The matrix tooth gauge *7* is used for determining the spread of the teeth (if any) in the matrix. In case of too much spread, the tooth recess may be narrowed by standing the matrix on one edge on the anvil block and tapping the upper lug with a plastic or fiber hammer until the recess permits the matrix to be slid about half way down the gauge *7*. Where the combination teeth are worn, the spread of the matrix tooth recess may be closed slightly and the teeth may be reshaped while the matrix is held by its lugs in the vise *8*. The vise jaw is operated by knob *9*. A ledge is milled in the stationary vise jaw just deep enough to clamp the matrix lugs, thereby preventing damage to the body of the matrix.

Punches *10* and *11* are used for reshaping the matrix lugs. Punch *10* is for the lower lug (approx. ⅛ in.) and punch *11* is for the upper lug (approx. ¼ in.). In use, a matrix is placed in the former die *1* and the appropriate punch *10* or *11* is tapped with a light hammer to spread the lug stock within the confines of the die recesses. Bad alignment of matrix characters may be corrected in this manner. Badly worn lugs which are burred may be treated with the punches to spread the lug stock instead of filing the burrs away. In the case of worn matrix lugs, the battle is always to try to maintain full lug size—there never is any too much lug stock with which to work. Careful and intelligent use of this matrix repair tool has resulted in the reclamation of thousands of matrices in the *Times-Union* plant, reports Mr. Capps.



Contained within this wooden tray are the Capps line-casting matrix repair anvil and dies together with a number of hand tools essential to the work.

Monomelt Bulletins

ONE of several bulletins published by the Monomelt Co. is *What Monomelt Does for Your Composing Room*. This is a 4-page illustrated folder in which is described the Monomelt system of direct melting and feeding of metal to type and line-casting machines. There are also single page bulletins for installing Monomelt on a Ludlow, Elrod or Monotype machine.

Monomelt Offers a Complete System for Type Metal Handling is another bulletin which may be obtained upon request to the Monomelt Co. It is a 2-page illustrated bulletin which pictorially describes the handling of metal from the kill-out cabinets to the casting machine.

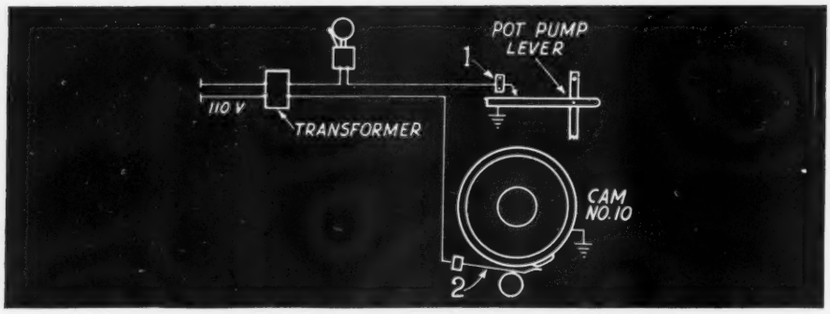


Diagram shows wiring circuit for the Hosmer electro-mechanical "short line" warning device used on Teletypesetter-operated line-casting machine in the Hope (Ark.) *Star* composing room. The doorbell unit is fastened on a wall immediately adjacent to the machine. At *1* is indicated a wire attached to the pot pump lever stop lever bracket screw. It must be insulated from the machine frame. It is bent to make contact with the pot pump plunger rod hinge pin catch when the pot pump lever is raised to highest position.

At *2*, the wood block, ¾ in. by 1 in. by 5½ in., supports the contact rod which is ⅛ in. brass welding rod, 8 in. long. The wire makes contact with the pad on cam No. 10. This is the pad that trips the second elevator safety pawl. At the moment the slug is being cast, the contact point is approx. 6 in. from the block. Adjustment is made by positioning the wire in the block.

Device Rings Bell *when short matrix lines on Teletypesetter-operated Linotype fail to cast*

THE problem of missing lines from galley proofs due to the slug-casting machine's rejection of "short" lines —particularly prevalent in Teletypesetter-equipped plants—has been solved by George W. Hosmer, Mechanical Superintendent of the Hope (Ark.) *Star*.

Mechanical "stops" have been devised for both short and long lines and have been used for several years on Teletypesetter operations of the Southwest Arkansas Circuit—but up to now no mechanical system could catch the short lines which failed to cast because they had only three, or perhaps only two, spacebands.

Mr. Hosmer's device is an electrical circuit which rings a doorbell any time the pot plunger lever fails to make its casting stroke.

He explains the accompanying diagram as follows:

On the periphery of No. 10 of a Linotype, there is a pad that trips the second elevator safety pawl. The doorbell circuit is so wired that when this pad is at the lowest position on the cam during its revolution, the circuit is closed. At this moment, if the slug is casting properly, the pot pump plunger has gone down, breaking the circuit at still another point —and the doorbell doesn't ring. But if the slug has failed to cast, the plunger has not gone down, the electrical circuit which the cam pad closed remains closed —and the doorbell rings, warning the machine operator to stop the Teletypesetter and back up for a line that has to be spaced out.

Reliance used to be placed in the *Star* on hearing the thump which occurs when the spaceband justification bar strikes the bottom of the vise jaws when a short line failed to cast—but this thumping sound is frequently lost in the noise of a composing-room. Sometimes, the thump is a false alarm, the slug actually having been cast. By comparison, the warning signal of the doorbell gadget is positive and loud.

The problem of controlling short and tight lines confronted the Southwest Arkansas Teletypesetter Circuit as soon as it was set up June 19, 1942. The circuit originates in the office of the Hot Springs *New Era* and *Sentinel-Record*, a Teletypesetter-equipped plant, whose day paper's (*New Era*) perforated tape for wire news only is fed into the transmitter before going back to its own composing room machines. Served by the circuit with tape are: Hope *Star*, Magnolia *Banner-News*, and Camden *News*; while El Dorado *Evening Times* and *Texarkana Evening News* receive page-printer copy from the same telegraphic impulse. The setting up of this circuit was reported at length in *Printing Equipment Engineer* for October 1942.

Tom Hartley of the Hot Springs composing room and others worked on the mechanical machine "stops" which eventually were installed at all points using Teletypesetter tape. These mechanical machine "stops" are connected in the assembling elevator of the linotype. When a matrix line is too long or is short, the assembling elevator is prevented from raising it to the delivery slide until the condition has been corrected. These assembling elevator long and short line devices are manufactured by a Memphis specialty man to specifications, and are obtainable through A. W. Estes, News-Times Publishing Co., El Dorado, Ark.

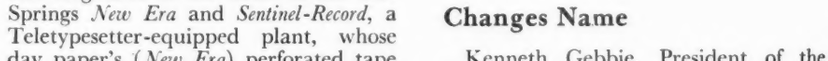
Mr. Hosmer's Hope experiments were interrupted by the Army in October 1942, but soon after his return in August 1945 he tackled the unsolved three-or-two - spaceband - line problem — and evolved his doorbell circuit as a positive warning signal.

The Hope *Star* employs mechanical stops on a new Model 5 Linotype which carries the wire-report tape, plus Mr. Hosmer's bell signal.

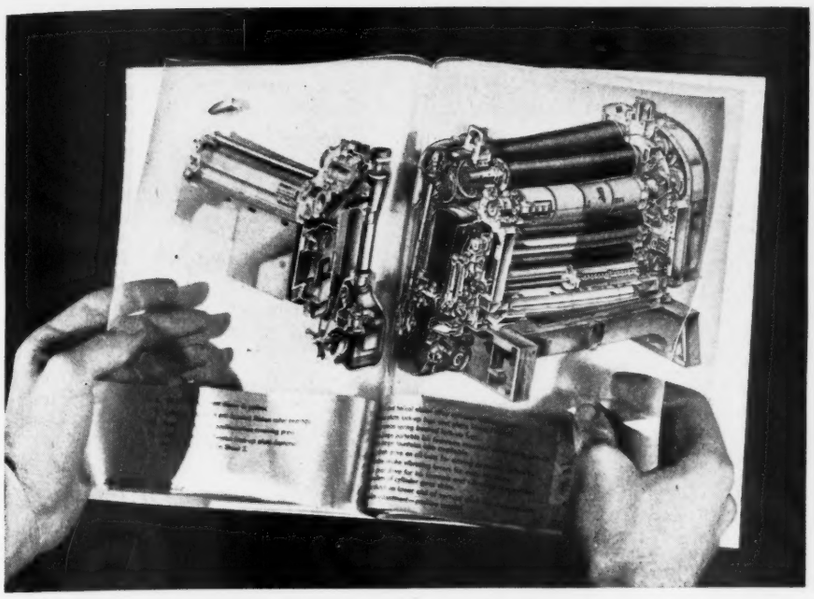
But the second Teletypesetter-equipped machine, a Model 8 Linotype which is used for both straight-matter and some display type, is equipped with the bell signal only. The mechanical "stops" are best suited for machines on which the measure is never changed—but the bell signal works on these and all purpose machines as well.

Changes Name

Kenneth Gebbie, President of the Wood, Nathan & Virkus Co., Inc., designers and builders of raised letter process machines, inks and Virkotype compounds, announced recently the change of name to Virkotype Corporation. Executive offices will continue to be located in Racine, Wis.



Sectional diagram of Cam No. 10 shows second elevator safety pawl cam or pad contacting the end of rod *2* to sound the alarm when a short line is not justified sufficiently to cast a slug. At the moment of contact, the contact point of the rod *2* is approx. 6 in. from the wood block 3.



View of inside page spread from Goss Printing Press Co.'s brochure in which is illustrated and described the Headliner newspaper printing press. The spread shown consists of two pages from the 8 page Trans-Vision section. These are printed by color rotogravure on cellulose acetate. As each leaf is turned, parts of the press unit are stripped away to reveal the "innards" or working parts of the unit. In the illustration, part of the plate cylinder and inking mechanism are shown in bright red to indicate how a portable fountain can be used for r.o.p. color printing. Lubrication system is shown in yellow and tubes in the system are copper color. Trans-Vision designed by Milprint, Inc., Milwaukee, Wis.

Press Mechanism Is Graphically Explained

A graphic means for explaining its Headliner newspaper press has been utilized by the Goss Printing Press Co. This consists of a series of transparent cellulose acetate sheets bound into the Goss Headliner brochure. The sheets are printed by the Trans-Vision process, that is, by rotogravure in natural colors. The object of Trans-Vision is to show how the "innards" of a machine or a product look with the outer covering removed. In the instance of the Goss brochure, the Headliner press unit is first shown on page 1. Upon turning over the page, the unit casing and guards are removed. The opposite side of sheet 1 shows in miniature the reverse side of the casing and guards just as though one were actually seeing it in the factory or pressroom. On page 3 are shown the impression and plate cylinders, the inking and driving mechanisms. There is some color printing to accentuate features of the press unit. The oil lubricating system is shown in yellow, the oil tubing appears in copper color, a half section of the impression and plate cylinders and the inking mechanism are printed in bright red to indicate use of the Goss portable ink fountain. Other construction and operating features are shown, including the Goss tension-plate lockup and impression control.

The next turn of a page removes one-half the elements for the press unit, so the reader can see the back side of the printing mechanism within the other half of the unit.

Progressively, turning the leaves of the Trans-Vision section of the brochure reveals the various component parts which have not been revealed previously. The seventh view shows the unit foundation and full width fountain.

The regular letterpress section of the brochure (7 pages) are well illustrated, and with the accompanying text, describe major improvements, including the folder.

The brochure consists of 20 pages and was executed by Milprint, Inc., Milwaukee printers.

The Layout of Printing Plants

THE Layout of Printing Plants is a practical treatise in which are outlined the basic elements to be considered. It has been written for the printing plant executive who is considering a layout for a new building, revamping his present layout, or for lowering production cost. In this monograph, the author, Printing Engineer Mark E. Powers, explains in elementary fashion what to consider and the objectives to be attained in making layouts. A check list of about 80 items tells you what to consider in planning a layout. This list, by the way, is one of the most valuable sections of the book because so many inexperienced plant executives run into unanticipated difficulties after making a layout, and perhaps when the layout is in process of being followed out.

Full instructions are given for making layouts, such as: Selecting scale for drawing, accuracy is essential, floor plan must show building details, use of quadrille (ruled) paper for layouts.

Mr. Powers carefully explains two and three dimensional templets, reasons for their utility, and how to make them.

Some discussion is presented on chalking the floor, floor space for work in process, lighting from windows, ventilation, floor loading, reducing vibration, shipping dock, etc.

How to check the layout on the basis of feet of travel is one of the most valuable sections of the book. The reason is that the plant executive can compute exactly wherein the new layout will or will not accomplish savings in workflow travel. Or, in the case of a new-plant layout, the executive can demonstrate that the layout has reduced foot travel to the minimum. These instructions are entirely practical for guidance in studying workflow for two reasons: (1) The plant executive is familiar with the type of work going through the plant, and (2) We feel that Mr. Powers's advice will apply to any type of work in the printing plant.

The Foreword was prepared by S. F. Beatty, Secretary and General Manager, and the brochure was published by Graphic Arts Association of Illinois, Inc. Originally, it was printed only for the benefit of the members of the Association, Mr. Beatty states that because of the wide-spread interest in the subject of layout in printing plants and because it has been impossible to find a book or a treatise applicable to printing plants, arrangements have been made to publish the monograph so that anyone may purchase it.

Mark E. Powers, Printing Engineer, authors monograph on *The Layout of Printing Plants.*

The Layout of Printing Plants—By M. E. Powers, Printing Engineer. Consists of 32 pages and cover, 8½ in. by 11 in. Illustrated. Price, $2.50 per copy. Order direct from the Graphic Arts Association of Illinois, Inc., 105 West Monroe St., Chicago 3, Ill.

Appoints Distributor

The Turner Printing Machinery, Inc., has been appointed to represent the E. P. Lawson Co. in the Midwest, it was announced recently by David W. Schulkind. The Turner Printing Machinery, Inc. was formerly the Turner Type Founders Co. Offices are located in Cleveland, Chicago and Detroit.

Illustration shows Finch improved facsimile recorder with new radio FM-AM receiver combined in one cabinet. Designated as Chairside Model. Produces 4 pages of printed and illustrated radio, 8½ in. by 11 in. every 15 min.

New Chairside Model

AN improved facsimile recorder and a new radio FM-AM receiver combined in a cabinet has been designed and production planned by Finch Telecommunications, Inc. Available also in table and console models.

With this new model, radio facsimile broadcasts can be brought into the home. Finch precision recording at 28 sq. in. per min., 105 lines to the inch, or 4 pages (8½ in. by 11 in.) every 15 min. gives permanently printed news, pictures, cartoons, short stories, comics and educational features.

The radio in the same cabinet provides both standard broadcast and the new (88-108 mc) FM sound program reception.

Industrial Logistics in Paper

ACTION pictures which tell the story of modern materials handling in the manufacture and commercial uses of paper feature a booklet entitled *Industrial Logistics in Paper*, issued by Elwell-Parker Electric Co. In 48 pages, 8½ in. by 11 in. it presents 147 halftone illustrations of electric power industrial trucks at work in production of pulp, processing and distribution of paper, printing and publishing, and fabrication of principal paper products.

Representative companies throughout the country using Elwell-Parker equipment cooperated in preparation of the booklet which reveals how adequate facilities for load-handling are essential to specialized manufacturing equipment and techniques. Characteristic similarities are noted in many industrial practices for the movement of goods from receiving, through storage, processing and shipping, yet important differences in details are apparent to those interested in the subject of industrial logistics.

While improved methods present opportunities for reducing costs, there are no guarded secrets pertaining to the general use of power trucks. Visual evidence of difficult jobs accomplished therefore is of practical value.

The booklet is sixth in a series so far issued by the Elwell-Parker Co. *Industrial Logistics in Paper* and any of the five preceding booklets are available to executives or department managers on request to Elwell-Parker Electric Co., or *Printing Equipment Engineer* will be glad to pass along your request.

Program

For Northwest Mechanical Conference Formulated

AS HAS been announced, the Northwest Mechanical Conference will be held at Hotel Nicollet, Minneapolis, Minn., on February 15, 16 and 17. The conference opens on Saturday, February 15 with a get-together party with manufacturers' and suppliers' representatives as hosts. Jim Richardson is chairman of the committee.

The conference general assembly on Sunday morning will be addressed by President Wm. C. Brown. Invocation will be given by Joseph Hick.

The Photo-engraving session will be presided over by Co-Chairmen Ebby Jannison and George Marsh. R. P. Mattern, President of May Research, Inc., will deliver a paper on *Low Reflection Treatment of Camera Lenses*.

The line-casting machinists will have a special meeting to be presided over by G. W. Wraggett and Joseph Cory.

A. C. Arneson will discuss composing room layouts at the Composing Room session. Robert Lee and Billy Davies will be co-chairmen.

On Sunday afternoon, Joe Menard will discuss *Mailing Room Layout*. At this meeting, Vern Hol and Joe Mayen will be co-chairmen.

At 7 o'clock, Sunday evening, February 16, the banquet will be held. George Grim, Minneapolis *Tribune* columnist will be master of ceremonies. Address will be delivered by Gideon Seymour, executive editor of the Minneapolis *Star* and *Tribune*.

At 9 o'clock on Monday, February 17, the Stereotype, Pressroom and Maintenance Machinists will hold their meeting. Ed O'Neil and Lawrence Kameron will be co-chairmen. Don Crews, Vice President of Sam'l Bingham's Son Mfg. Co., will discuss printers' rollers. An unannounced speaker will talk about paper.

The Minneapolis newspapers will be hosts to the executives at a luncheon on Monday noon. Business managers of the Minneapolis and St. Paul newspapers will talk.

Officers of the Northwest Conference are as follows:

Wm. C. Brown, President—Mechanical Supt., Minneapolis *Star* and *Tribune*; Charles Burtram, First Vice President—Supt. of Pressroom, St. Paul *Dispatch* and *Pioneer Press*; Charles McGuire, Second Vice President—Asst. Mechanical Supt., Minneapolis *Star* and *Tribune*; Vernon G. Eck, Secretary-Treasurer—Printing Instructor, Dunwoody Industrial Institute. Board of Directors—George Curle, Al Rosene, D. D. Curriden.

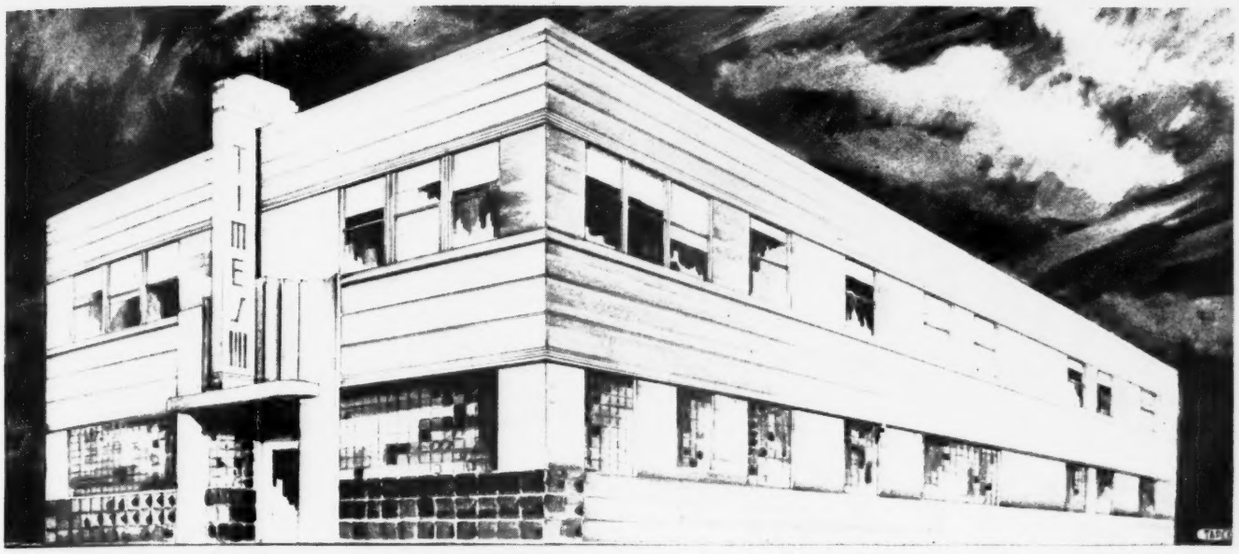
Simplified Stock Forms Systems for Newspapers

Louis J. Mangis, 1213 Oakglen St., Pittsburgh 4, Pa., has devised a simplified stock form. It is for use in newspaper composing rooms. Usually, stock exchange quotation copy after being prepared for the composing room, is divided into a number of takes so that each operator receives a section of the table. Mr. Mangis's form is so arranged that the abbreviations for the stub (company names) are standardized for style. In addition, through the use of symbols the operator can instantly recognize not only the proper abbreviations but also the proper spacing and leaders. For instance, a vertical rule indicates a thin space without the usual spaceband. The number of en leaders to be dropped after the company name are indicated by inferior reference numbers. Thus, all operators will abbreviate company names identically and will also be saved the necessity for hand inserting a thin space or extra leader. When he has assembled the quotation in the last column, the matrix line is ready to be sent to the casting mechanism of the machine without any hand justification. Since all newspaper matrix faces are not alike, the table must be adapted to the face used in any one plant.

Further information may be secured direct from Mr. Mangis at the address given above.

Pension Plan

The Des Moines (Ia.) *Register and Tribune* has revised the pension plan offered to its employees. Participation in the plan is voluntary. Approximately 95 per cent of the 752 employes eligible to enroll have indicated their desire to participate.



View of Anchorage (Alaska) ***Daily Times*** modern new building which was built last summer. The building is of reinforced concrete with glass block windows and employs a radiant heating system.

Daily Times of Anchorage, Alaska Occupies Modern Building

THE Anchorage (Alaska) *Daily Times* now occupies a modern newspaper plant with the completion of the first floor of its new re-inforced concrete building, the structure is designed for two floors in the immediate future and a possible three.

The building introduced for the first time in Alaska a radiant heating system. It also uses glass block and walnut veneer (Flexwood) walls in the public offices.

The publishing company spent $100,000 in building and occupying the plant last summer. It was one of the few new buildings erected during the short building season.

The Anchorage *Daily Times*, now in its 30th year of publication, is one of the largest papers in the territory. Robert B. Atwood, editor and publisher, said its circulation tops 7000 compared to the 650 in 1935 when he joined the firm.

New equipment will be added as quickly as it becomes available to permit the paper to increase its circulation and the number of pages. A Goss Cox-o-type press is now used. The plant also has a job department with two automatic presses and hand presses.

The new building is 125 ft. by 44 ft. and occupies a lot on the main street. The front has a ceramic veneer tile trim, stainless steel canopy, glass block windows. Ventilation is entirely by exhaust ducts and fans. Fluorescent lighting is used throughout.

The floor of the shop has a grid system for power lines, which will permit tapping in new machinery at any spot desirable. Atwood said the entire plant was built to permit the doubling of all equipment.

The plan calls for moving the shop to the second floor when a rotary press is installed. This will make the first floor available for the pressroom and newsprint storage.

The first floor provides space for all departments, including a photographic dark room, and the weekly *Forty-Ninth Star* which is published Sundays by the same firm.

All 25 employes of the firm came from newspapers in the states. Atwood was formerly with the Worcester (Mass.) *Telegram* and the Springfield *Illinois State Journal*. Bernard Kosinski, managing editor, came from the Hartford (Conn.) *Courant*. Edward J. Fortier, editor of *The Star*, came from the Bemidji (Minn.) *Pioneer*. In the shop George Green, from Estherville, Ia., is foreman on the news side and Clarence Hafling from Durango, Calif., is foreman on the job side. Ten of the employees are veterans of World War II.

William A. Manley, Anchorage architect, designed the building.

Coated Paper Problem— How It Was Overcome

How to circumvent the coated paper shortage without sacrificing too much on illustrations is shown in *The Way of Peace*, a 44-page booklet recently completed by William E. Rudge's Sons, New York, N. Y., for the Washington Cathedral National Building Fund. Size of booklet is 5⅞ in. by 8½ in. The booklet contains three four-color plates, printed on 70 lb. coated stock and tipped in at appropriate points in the text, plus two coated wraps carrying eight halftone illustrations. Since the four-color plates were available from the Washington Cathedral magazine, a touch of color without undue expense was made possible. Antique paper was used for the rest of the booklet.

William C. Banta, Jr., publicity director, representing the John Price Jones Corp. of New York, planned the job, and the typography was under the supervision of Carl Burger, New York artist. William E. Rudge's Sons printed the booklet in two colors and Meriden Gravure Co. of Meriden, Conn. did the photographic cover by the collotype process. The initial run was 2500 followed by a 5000 reprint.

Consider Program of Rotogravure Research

DURING the fall of 1946 a group of 19 executives of some of the country's finest gravure printing plants met at Battelle Memorial Institute in Columbus, O. The purpose of the meeting was to discuss a tentative program of rotogravure research. The gravure executives met with a number of Battelle's staff of scientists from the Graphic Arts Division.

Technical and operating problems of the industry were discussed. During the discussion, it was agreed that carbon tissue was the most important problem. A number of other research problems were agreed upon.

A committee was appointed to consider further development of the rotogravure research program. It consists of the following members: Chairman, M. George Martin, Standard Gravure Corp. Louisville, Ky.; C. J. Murray, Philadelphia *Inquirer*; George Pruecil, Chicago Rotoprint; Frank Sportelli, International Color Gravure, New York; Len S. Pinover, Intaglio Service, Inc., New York; Arthur Dultgen, New York *Daily News*; M. Tierman, Art Gravure Corp. of Ohio, and Carl L. Recke, C. T. Dearing Printing Co., Louisville, Ky.

It is intended that membership in the rotogravure research organization be made industry-wide.

Printing Industry Ratio Study

THE twenty-third annual ratio study of the printing industry, entitled *Ratios for Printing Management for the Year 1945*, was released recently by Printing Industry of America, Inc., Washington, D. C.

The study is based on an analysis of 495 operating statements of printing plants throughout the United States which had a total sales volume of $157,292,232 in 1945.

Participation in the ratio study of the printing industry showed a further increase over 1944 when 387 plants took part in the survey, according to Dennis A. Sweeney, chairman of the ratio study committee of PIA and executive secretary of the Indiana State Typothetae.

Since these studies were inaugurated in 1921, nearly $1,408,000,000 of printing sales have been analyzed. These surveys have been made possible by the fact that the printing industry was the first industry in the country to undertake seriously the establishment of uniform cost and accounting methods.

Members of the ratio study committee, in addition to its chairman, are John R. Shultz, manager of The Graphic Arts Association, Milwaukee, Wis., and Frank E. Somers, secretary-manager, Printing Industry Association, Dayton, O.

For 1945 the typical printing production cost dollar showed the following picture: Factory costs of goods sold amounted to 81.57 per cent of total costs, factory wages, 31.72 per cent; and materials used for 38.96 per cent. Paper alone took more than 21 per cent of total manufacturing costs in the reporting plants.

Administrative expenses added 10.99 per cent to printing costs, and selling expenses accounted for the remaining 7.43 per cent of the printing cost dollar in 1945.

If office and sales payrolls are added to factory wages, the combined payroll in printing establishments constituted well over 40 per cent of total expenses in 1945.

The 1945 printing balance sheet ratio analysis shows a further shift from fixed to current assets. This trend has been in evidence since the start of the war and reflects the halt in production of printing equipment during the war. In 1939 fixed and current assets in printing plants were about equally divided. Six years of continued depreciation but inability to replace worn equipment threw this relationship considerably out of kilter. The printing industry now is in a sufficiently liquid position to finance needed equipment purchases but finds itself faced with sharply increased prices for such equipment. This, over the years to come, will add considerably to depreciation charges as part of fixed factory expenses, thus probably reversing the downtrend in this expense item that had been in evidence between 1939 and 1945.

Conference Dates

ANPA Mechanical Conference—Palmer House, Chicago, Ill., June 9, 10, 11, 1947. Worth Coutney, Chairman; Walter E. Wines, Manager, ANPA Mechanical Dept., 370 Lexington Ave., New York 17, N. Y.

Great Lakes Newspaper Mechanical Conference—1947 meeting to be held in Grand Rapids, Mich., dates to be announced later. President Deo A. Padgett, Composing Room Supt., Cleveland *Plain Dealer;* Secretary Al. P. Oberg, Composing Room Supt., Flint (Mich.) *Journal.*

International Association of Printing House Craftsmen — 1947 convention city to be announced later. Wm. H. Griffin, President, Griffin Bros., 447 Sansome St., San Francisco, Calif.; Secretary, Pearl E. Oldt, 702 Griswold St., S. E., Grand Rapids 2, Mich.

International Trade Composition Association—Frank M. Sherman, Executive Secretary, 1015 Chestnut St., Philadelphia 7, Pa.

National Association of Photo Lithographers — Walter Soderstrom, Executive Secretary, 1776 Broadway, New York 19, N. Y.

New England Mechanical Conference—Hotel Statler, Boston, Mass., Nov. 8 and 9, 1947. President, Wm. F. Madden, Composing Room Supt., Worcester, (Mass.) *Telegram-Gazette.* George L. Green, President, Providence (R.I.) *Journal;* Walter C. Crighton, Secretary-Treasurer, New London (Conn.) *Day.*

Northwest Mechanical Conference — Nicollet Hotel, Minneapolis, Minn. Feb. 15, 16 and 17. President, Wm. C. Brown, Mechanical Supt., Minneapolis (Minn.) *Star-Journal;* Vernon Eck, Secretary, 3725 48th Ave. S., Minneapolis 6, Minn. Open to everybody interested in newspaper mechanical production departments.

Pacific Newspaper Mechanical Conference—1947 meeting at Hotel Biltmore, Los Angeles, Calif. May 10 and 11, 1947. President Edw. Sparks, Pressroom Supt., Los Angeles *Examiner;* Secretary, Fred J. Moyer, *Daily News*, Los Angeles, Calif.

PNPA 1947 Mechanical Conference—Penn-Harris Hotel, Harrisburg, April 11-12. William N. Hardy, Manager, PNPA., 209-213 Telegraph Bldg., Harrisburg, Penna., Nicholas M. Fellman, Chester, (Pa.) *Times*, chairman, PNPA Mechanical Committee.

Printing Industry of America — French Lick Springs Hotel, French Lick, Ind. Sept. 22, 23, 24 and 25. James R. Brackett, General Manager, 719 Fifteenth St., N. W., Washington, D. C.

SNPA (Eastern Div.) Mechanical Conference—Walter C. Johnson, Manager SNPA, P. O. Box 1569, Chattanooga 1, Tenn. Chairman Executive Committee, I. J. Gardner, jr., Composing Room Supt., Chattanooga (Tenn.) *Times.*

SNPA (Western Division) Mechanical Conference — Galvez Hotel, Galveston, Texas. February 17-18, 1947. Secretary, C. W. Tabb, 723 Texas Bank Bldg., Dallas, Tex. Executive Committee Chairman, F. J. Williamson, San Antonio (Tex.) *Express-News.*

Conference Date Set

The Southern Newspaper Mechanical Conference (Western Division) will be held February 17 and 18 at the Galvez Hotel, Galveston, (Tex.) L. W. Culver, Fort Worth (Tex.) *Star-Telegram*, became chairman of the Conference upon resignation of F. J. Williamson. The Conference Executive Committee elected W. F. Thompson, Austin (Tex.) *American-Statesman*, vice chairman at a meeting recently.

The executive committee set the permanent annual meeting time of the Conferences as beginning the third Monday in each February. The permanent annual meeting of the executive committee to prepare for the following Conference was set for the first Sunday in each August.

The Southern Newspaper Mechanical Conference (Western Division) is for mechanical department executives of all newspapers in Texas, Arkansas, Oklahoma and Louisiana west of the Mississippi River.

Hawaiian Newspaper Expands

Dean D. Sellers, vice president and general manager of the Hilo (Hawaii) *Tribune-Herald* recently announced the purchase of 30,000 sq. ft. of land to erect a modern newspaper office and plant building.

A newspaper press which prints 24 pages at a speed of 20,000 papers per hour has been ordered and will be used in the present building until the new one is completed. In addition to the new press, $50,000 will be spent for other plant equipment.

The newspaper operates a radio receiving station. The station receives direct radio teletype service on Associated Press, United Press and Press Wireless news services from the west coast. The dispatches are received on two radio teletypes, one in the Kaumana radio station and the other in the *Tribune-Herald* office.

Four-Color Process on Rayon Book Cloth

CLAIMED to represent the first use of four-color process printing on a rayon book cloth, a series of de luxe small books with covers adapted from early American samplers and other craftsmanship has just been published by Hastings House. Covers for these distinctive books are made of Teralin, a long - wearing pyroxylin - impregnated rayon made by Athol Mfg. Co., Athol, Mass.

The designs are taken from eighteenth and nineteenth century embroidery, scarves, samplers, and paintings, and are reproduced on Teralin, a rayon base fabric. Attractive in appearance, with soft pastel shades, and delicate printing, these Americana Handibooks were designed particularly for a lady's purse or dressing table. Colors are fast, and the covers may be cleaned of all ordinary smudges and finger prints with a damp cloth.

The miniature books are for addresses, shopping lists, autographs, notes, engagements and diary, and for records of birthdays, anniversaries, and greeting cards.

Because of the uniformity of the woven rayon base and its pyroxylin impregnation, Athol's Teralin is suited for the reproduction of such art work as "samplers." Athol Mfg. Co. is well known in the book cloth field, having originated in 1932 a light weight, long-wearing pyroxylin impregnated fabric for text books, called Terek Book Cloth.

From the standpoint of printing, there was a serious problem involved in registering the four colors of the "Handibooks," on the woven cloth. Harrison Art Advertising, of Philadelphia, solved the problem, however, and achieved perfect register. Another feature of this new four-color development was the use of wax color plates.

The eight covers in the series were adapted by Lee Maril from early American sources. The books were designed by Rudolph J. Gutmann, printed by Brett Lithography Company, Inc., covers printed by Harrison Art Advertising, and bound by Tauber's Bookbindery.

New Advertising and Sales Promotion Policy

Interchemical has announced a new decentralized policy for its advertising and sales promotion activities. According to George Welp, Director of Advertising and Sales Promotion for Interchemical Corporation, the management has had under consideration for some months the advisability of decentralizing the Corporation's advertising activities to make them divisional responsibilities instead of clearing them through a centralized Interchemical Promotion Department. Since advertising is essentially a selling tool Interchemical believes it should have the same direct interest and control by divisional maangement as do other sales activities.

Effective November 1, each division is operating through its own sales promotion and advertising personnel working with Interchemical's advertising agency. George Welp has accepted the responsibility for directing the sales promotion and advertising activities for the two largest divisions, International Printing Ink and Finishes Divisions of Interchemical Corporation working directly with the executive heads of these divisions.

Tribute to Franklin

With its recent regular mailing, Fred Hartman, Director of the National Graphic Arts Education Association, sends a little printed piece 4⅛ in. by 5 in., prepared by Timken Vocational High School Printing Dept., in Canton, O. A small portrait of Benjamin Franklin appears above the following:

An English writer said of Franklin:

He was the ★ of his profession, the *type* of honesty, the ! of all; and although the ☛ of death has put a . to his existence, every § of his life was without a ‖.

NYU Printing Courses

New York University is to offer for the second time during the Spring Term, 1947 its course in Printing Ink Technology, under the supervision of Dr. William Hodgkiss of the Sun Chemical Corp. This course is being repeated because of the demand from the printing ink industry for this type of educational direction. Inquiries regarding the course have come to the University from such distant cities as Brussels, Belgium and Mexico City.

Printing Ink Technology is aimed not only at the technician, but also at men in all phases of the printing industry who seek a more detailed formal training in this area. In addition to Dr. Hodgkiss' lectures, there will be talks by various experts in their respective fields.

A companion course which will be given for the first time is Pulp and Paper technology. This course is being organized under the supervision of Harold M. Annis of the Oxford Paper Co. Mr. Annis, who has had 20 years of experience in the paper field, will head a staff of experts from the paper industry in the lectures.

The courses have *no* academic prerequisites for admission. Further information will be furnished by S. G. Roth, Room 211, Main Bldg., 100 Washington Sq., East, New York, N. Y.

Running Unconditioned Paper

From address by Hon. A. E. Giegengack, U. S. Public Printer, at National Association of Photo-Lithographers Annual Convention in Washington, D. C.

ONE of the features on our offset presses that gets attention from visiting executives is the banks of infrared lamps focused on the feed-pile. The interest shown makes it reasonable to assume that their use is not very general. We borrowed the idea from a Baltimore firm, and we find it works to near perfection when running unconditioned paper. It eliminates the need for hanging stock, flattens out wrinkles, and keeps the presses running steadily, with no necessity for cutting or reducing the blanket. It has saved us thousands of hours of production time. This is what every good production man tries to do—to keep his presses running—and all our efforts during and since the war have been in that direction.

Cleaning Base Forms in the Government Printing Office

The base forms are suspended by overhead chains and vertically placed in a tank equipped with a steam coil on the bottom to permit heating and a one-inch open end pipe conveying live steam below the surface for agitation of the cleaning solution. They are immersed in a water solution of sodium sesquisilicate heated to the boiling point. About one pound of "Metso 99" to each gallon of water will give sufficient cleaning strength. The proportions need not be exact. After about two hours of this treatment, they are removed from the bath to an adjoining sink and thoroughly rinsed with a hot water spray. They are then dried in a jet of compressed air and placed in a shallow tray where a mixture of half common motor oil and half kerosene is poured over them and they are again suspended to drain off the excess oil. The thin film of this oil which remains on the metal surface, serves as a protective coating against rusting.

The plate catches used with our base forms are cleaned in the same hot "Metso 99" solution and oiled in the same mixture of kerosene and motor oil by placing them in a screened basket during the treatment. After dipping the basket in the oil mixture and allowing the excess oil to drain off, the catches are again put into immediate useful circulation.

Sodium sesquisilicate is manufactured and sold under the trade name of "Metso 99" by the Philadelphia Quartz Company of 121 S. Third St., Philadelphia, Pa.

A little experimenting on the part of the users should give them a knowledge of the best working conditions for getting the desired results.

—M. S. Kantrowitz, *Chairman*, Research Committee, Washington Club of Printing House Craftsmen—*The Capital Craftsman.*

EXECUTIVE ¶s

Sun Chemical Corp. announces the appointment of Walter Huber as vice president of General Printing Ink Div.

Mr. Huber graduated from Cornell, where he majored in chemistry in 1919. Shortly thereafter he entered the laboratories of J. M. Huber, Inc. In 1933 Mr. Huber became President of J. M. Huber, Inc. and continued in that capacity until the summer of 1944, when he left to engage in research in the Graphic Arts. When the Ink Industry organized a Committee to study cost methods, Mr. Huber was selected as a member of the Printing Ink Cost Bureau. For a number of years he was on the board of directors of the National Association of Printing Ink Makers, and served as president of that organization from 1936 to 1938.

Ernest J. Sadlier, engraving superintendent of Des Moines (Ia.) *Register* and *Tribune*, retired in December. Sadlier was employed by the *Register* and *Tribune* for 19 years, in three different periods of employment. During the absences he worked for the Commercial Engraving Co. and Central Engraving Co. At one time he worked for the *Rocky Mountain News* in Denver, where he installed an engraving department. His co-workers presented him with a wristwatch and the Des Moines Photo-engravers' Union honored him at a dinner.

Reginald Orcutt, Linotype vice president for overseas, who recently returned to Brooklyn after another trip around the world, addressed the Carteret Book Club of Newark, N. J. recently. The talk featured a dinner meeting held in the clubrooms of the Essex Club.

After 26 years of service, Albert C. Walsh, purchasing agent of the Timken Roller Bearing Co., has retired, according to a recent announcement. Walsh joined the Timken firm when it purchased the assets of the Gilliam Mfg. Co., with whom Walsh was then employed.

Frank C. Hoy has joined the sales force of George R. Keller in Washington, D. C. Mr. Hoy has had wide experience in the Graphic Arts machinery, equipment, and supply field. Until recently he was Industrial Specialist in Printing and Lithographing Machinery, Bureau of Ships, U. S. Navy. He is well known throughout the industry.

E. O. Vandercook, president of Vandercook & Sons, Inc., has announced the appointment of O. F. Duensing as Sales and Advertising Manager. The appointment of Mr. Duensing is the result of a broader, more aggressive sales policy recently adopted by Vandercook following its announcement that all Vandercook proof presses and Hacker equipment will be sold throughout the United States directly and exclusively by the company's

O. F. Duensing is appointed sales and advertising manager of Vandercook & Sons, Inc.

own salesmen. Vandercook's sales executive has devoted the biggest portion of his lifetime to the advertising and merchandising fields. In 1936, he established his own advertising agency in Chicago, specializing in industrial sales and advertising problems. Now, after ten years in business, he will close his agency to enter the Vandercook organization. The Vandercook announcement also reveals that an additional plant began operation in Chicago. Together with the company's main plant, production has already been stepped up to four times the pre-war output.

J. S. Russell, farm editor of the Des Moines (Ia.) *Register and Tribune*, has been chosen acting chairman of the Western Policy committee, succeeding W. W. Waymack. Waymack, former editor of the *Register and Tribune*, recently accepted an appointment to the atomic energy commission, but will remain as a member of the committee. The Western Policy committee is made up of midwest people who are interested in promoting a better understanding between agriculture, industry and labor. It is especially active in the promotion of forums in which people in authority give their views and answer questions. Russell will serve as chairman until the committee holds its annual meeting in February.

Emory W. Worthington has been appointed chief engineer by the Champlain Co., of Bloomfield, N. J., manufacturers of rotogravure and letterpress printing

Emory Worthington becomes Chief Engineer for Champlain.

equipment. As chief development engineer for the Goss Printing Press Co., Worthington handled installations for plants in Britain and the United States. Working with the Rotogravure Engineering Co. and the Goss Co. since 1932, he contributed many improvements and inventions to the printing field for both letterpress and gravure presses. Worthington's duties with the Champlain Company will include the design and development of equipment for application on the company's line of presses. Worthington is a member of the American Society of Mechanical Engineers.

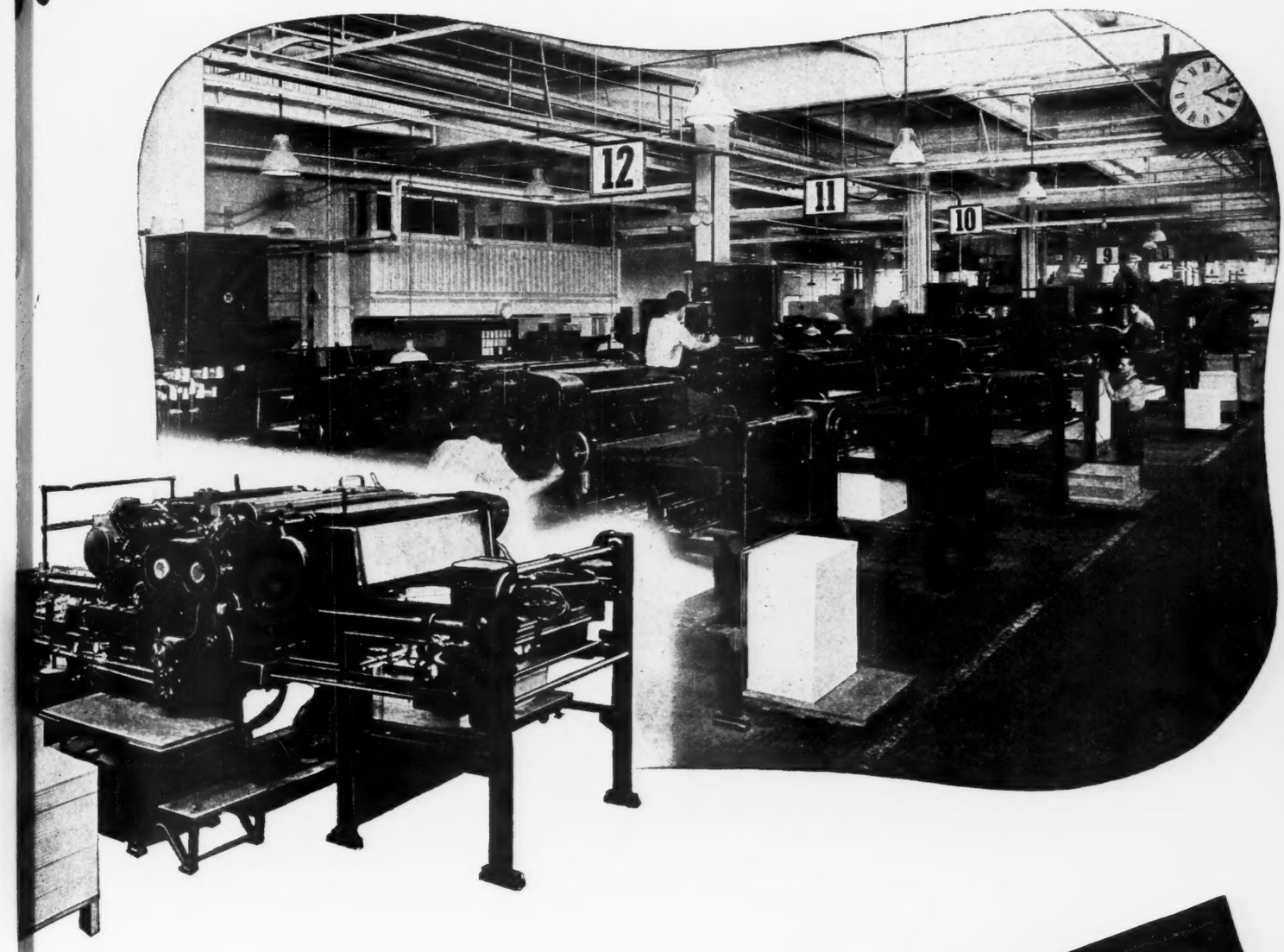
Eddie Gaughan, former pressroom foreman on the Tulsa (Okla.) *World-Tribune*, joins the New England News-

Eddie Gaughan becomes New England Newspaper's southwestern representative.

paper Supply Co., to be their southwestern representative. Gaughan was pressroom foreman on the *Tribune* for 15 years. In June 1941, when the *Tribune* merged with the *World*, he became pressroom foreman of both papers. He is well known in the southwest among the men in the printing industry. In 1935 he helped organize the Texas-Oklahoma Mechanical Conference, which is now the Western Division of the Southern Newspaper Mechanical Conference. In 1938 he was a delegate at Dallas, Tex., and helped organize the Southwest Conference

Speaking of Mass Production

Each press in this battery of Cottrell-Claybourn two-color rotaries operates at a speed up to 5500 sheets per hour. This is an example of efficient operation which means, for the printer, large edition economies even on moderate length runs.



C. B. COTTRELL & SONS CO.
Westerly, Rhode Island
New York: 25 E. 26th St. • Chicago: Daily News Bldg., 400 W. Madison St. • Claybourn Division: 3713 N. Humboldt Ave., Milwaukee, Wis. • Smyth-Horne, Ltd., 13 Bedford Row, London W.C. 1, England

Cottrell

OVER 92 YEARS OF GROWING WITH THE PRINTING INDUSTRY

Printing Pressmen and Assistants. He has been very active in both of these organizations.

David W. Schulkind, president of E. P. Lawson Co., recently announced the appointment of Richard C. Corris as

Richard C. Corris joins E. P. Lawson Co. as assistant sales manager.

assistant sales manager. Mr. Corris will also supervise the formation of an export sales division.

The Linotype Co. announces that John C. Langley has joined that organization as a production engineer and is now covering southern Alabama, southern Georgia and western Florida. Mr. Langley, a printer and operator of many years' experience, served his apprenticeship with the *Sanford* (Fla.) *Herald*. Later he worked for the Daytona Beach (Fla.) *Sun-Record*, and for the *Birmingham News*.

This is a picture of Carl Kreuger, Vice President of *The Daily Newspapers*, Stockholm, Sweden. Mr. Kreuger with two associates, spent about 2½ months in the United States recently. The two men who accompanied him were Paul Strandberg, Production Manager, and Per Norman, Photo-engraving Superintendent. All three men were investigating equipment, methods and processes. The three newspapers published by this firm are: *Stockholms-Tidingen* (afternoon paper), *Afton bladet* (morning paper), and *Vasternorrlands Allehanda*, a smaller paper published in northern Sweden. Circulation of the two Stockholm papers is about 200,000 each daily.

Dan C. Hungerford, president of Hungerford Plastics Corp., has announced the election of R. M. Ellis as vice president. Mr. Ellis, who has been with the organization since its founding in 1942, retains his position as chief mechanical engineer.

The Graphic Arts Industry, Inc., elected officers and directors at the annual meeting in Minneapolis, Minn. Pictured above from left to right are: R. H. Gydesen, Northwest Manager, Sam'l Bingham's Son Mfg. Co., a retiring director; William T. Koester, Northwest Manager, Western Newspaper Union, elected director; Harry W. Detlef, Northwest Manager, American Type Founders, re-elected director; and, Roy L. Brewer, President, Duragraph, Inc., elected division chairman.

Elects Officers

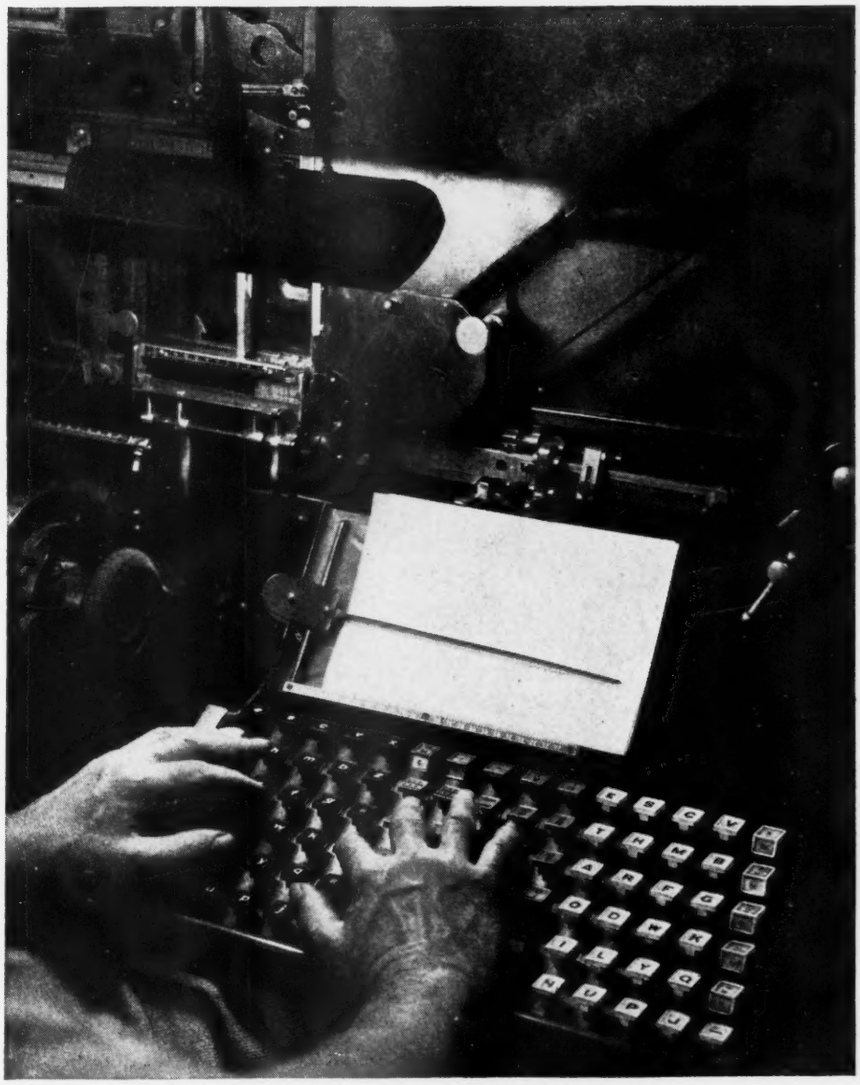
The Graphic Arts Industry, Inc., of Minneapolis, Minn., elected officers and directors at its 69th annual meeting. The meeting was held in Minneapolis on November 19. The officers elected are: Clarence Mann, President; Charles H. Jensen, Chairman of Board of Directors; Vice Presidents are Felton Colwell, R. E. Haugan, William J. Hickey, A. W. Peterson and H. F. Shedd; Paul J. Ocken, Vice President and General Manager; Grace H. Downing, Executive Secretary; Leighton R. Johnson, Treasurer; Frank P. Leslie, Assistant Treasurer.

The directors elected were: Earl D. Cross, President, Fritz-Cross Co., St. Cloud, Minn.; Charles E. Buckbee, President, Buckbee-Mears Co.; Ralph W. Cornelison, President, Electric Blue Print Co.; William J. Hickey, President, H. M. Smuth Printing Co.; W. T. Coulter, President, Bruce Publishing Co. from St. Paul, Minn. F. B. Johnson, Vice President, Johnson Printing Co., Eau Claire, Wis. L. G. Palmgren, Chairman Board of Directors, Hart Publications, Inc., Long Prairie, Minn. J. E. Whiting, President, Whiting Press, Inc., Rochester, Minn. Harold J. Hoffman, Secretary-Treasurer, Smead Mfg. Co., Hastings, Minn. A. W. Taylor, Vice President, Stewart-Taylor Co., Duluth, Minn. A. R. Otteson, Secretary-General Manager, Pierce Co., Fargo, N. D. E. J. Kahler, Vice President and Manager, Sioux Falls (N.D.) *Argus Leader*. P. H. Verstegen, President, Verstagen Printing Co., Sioux City, Ia. A. R. Bawden, President, Bawden Bros., Inc., Davenport, Ia. G. P. Freeland, Vice President, Desaulniers & Co., Moline, Ill. Birger Swenson, General Manager and Treasurer, Augustana Book Concern, Rock Island, Ill. R. H. Hervey, Manager Graphic Arts Dept., J. R. Watkins Co., Winona, Minn. Leighton R. Johnson, Secretary, A. G. Johnson Electrotype Co.; Albert W. Peterson, President, Tension Envelope Corp.; W. W. Glaefke, Manager, International Printing Corp., Charles W. Cole, President-Treasurer, Harrison & Smith Co.; Felton Colwell, President-Treasurer, The Colwell Press, Inc.; E. I. Derrick, Vice President and General Manager, Midwest Printing & Lithographing Co.; Paul E. Foss, President, Paul Foss Printing & Lithography; William T. Greig, Vice President, Bureau of Engraving, Inc.; Charles H. Jensen, President, Janson Printing Co.; Clarence Mann, President - General Manager, Printing, Inc.; George F. Munier, President-Treasurer, Poucher Printing & Lithographing Co.; E. H. Olson, General Manager, Japs-Olson Co.; S. Walter Sears, Mono-Trade Co.; Harry W. Detlef, Manager, American Type Founders, Inc.; Robert B. Gile, Gile Letter Service, Inc.; Walter H. Bauer, Vice President, Bureau of Engraving, Inc.; Allen Banbury, Banbury Studios; Fred C. Carlson, Secretary-Treasurer-Manager, Independent Press, Inc.; Carl L. Elander, Elander Printing Co.; E. B. Hoffman, Hoffman Printing Co.; C. A. Leighton, President-Treasurer, Leighton Bros., Printing Co.; W. O. Lund, Jr., Vice President, Lund Press, Inc.; Frank E. Schochet, Schochet Press, Inc.; Randolph E. Haugan, Manager, Augsburg Publishing House; H. J. Pattridge, President, Miller Publishing Co.; A. H. Ittner, Baer-Strand Co.; Jay E. Murray, Murray & Malone Co.; H. F. Shedd, Vice President, Secretary, Shadd-Brown Mfg. Co.; W. T. Koester, Manager, Western Newspaper Union; Arthur J. Walker, President, Farnham Stationery & School Supply Co.; Olaf Jorgenson, Jorgenson Printing Products from Minneapolis, Minn.

Herbert Kaufman has established an office at 345 Madison Ave., New York, N. Y. He is a consultant in advertising, sales promotion and public relations. Mr. Kaufman was formerly assistant to the president of the Ever Ready Label Corp.

Announcing the NEW Fluorescent

LINOLAMP



*Linotype's Fluorescent Linolamp**

Improved light for Linotype operators. Controlled lighting of copy, keyboard and assembler. Increased foot-candles with less power. Reduces eye-fatigue and it's cool!

**Manufacturers promise delivery in from three to four months.*

LINOTYPE · 29 RYERSON STREET, BROOKLYN 5, NEW YORK

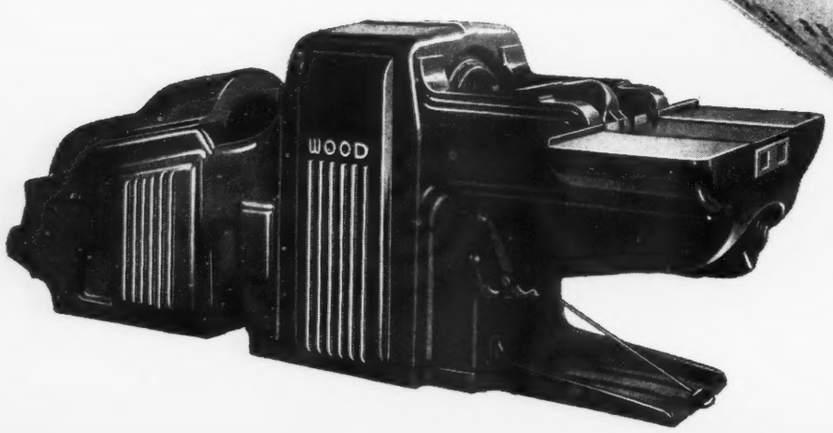
TRADE LINOTYPE MARKS

Linotype Bodoni Family

Wood
NEWSPAPER
MACHINERY

TYPICAL WOOD AUTOPLATE EQUIPMENT NOW IN FULL PRODUCTION

TENSIONPLATE
AUTOSHAVER



WOOD NEWSPAPER MACHINERY CORPORATION PLAINFIELD, N. J. — NEW YORK OFFICE: 501 FIFTH AVENUE, NEW YORK 17, N. Y.

Patents

For The Graphic Arts Field

Covering patents issued November 19, November 26, December 3, December 10.

All new patents for the Graphic Arts are reported exclusively for Printing Equipment Engineer by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issuing each week. Printing Equipment Engineer is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating

During the four weeks covered by this report, no patents have been issued for this heading.

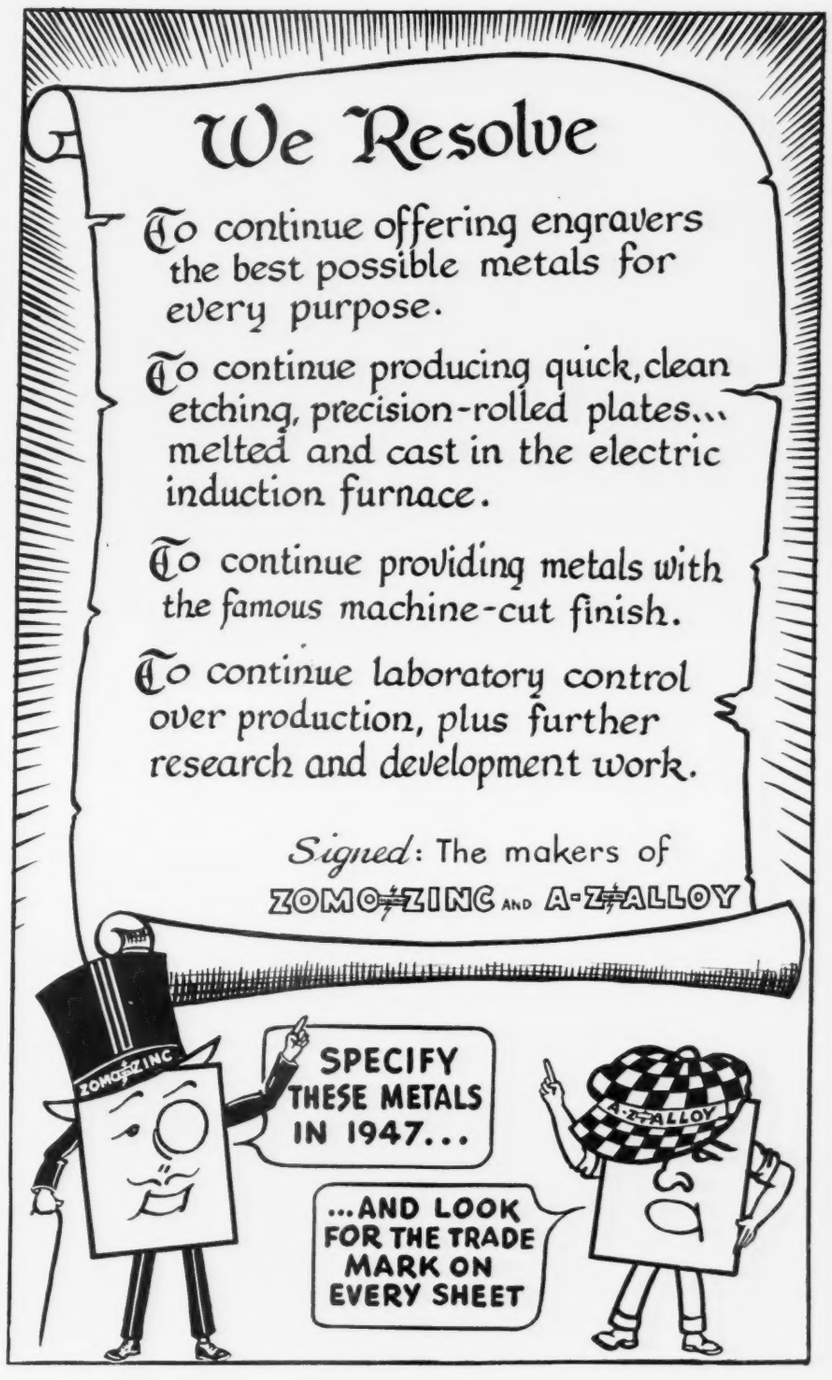
Composing Room Equipment

2,411,723. VARIABLE SPACING MECHANISM FOR TYPEWRITER-LIKE MACHINES having the general appearance, operation, paper feed, keyboard, and ribbon, all similar to those customary in the regular typewriter. However, the variable spacing mechanism enables the machine to turn out copy which has the appearance of typ-set copy and is suitable for all forms of reproduction processes which employ photographic steps in the preparation of printing plates. The machine is designed for operation by a skilled typist and does not require the services of a craftsman in the printing art. This machine carries three or more "baskets" of type, each a complete font of upper and lower case letters, punctuation marks, etc. The "baskets" are circular and are positioned near the front of the machine. Each "basket" may be selectively brought into typing position. Thus, for instance, 6, 8 and 12 point type may be carried in the three baskets and copy may be prepared in which the 8 point type is used for the body, 12 point for headings and 6 point for footnotes. The machine also provides for justifying each line of type to make the right-hand margin even. Invented by Walter J. Hausman, Washington, D. C. Assigned to Burnell Machine Co., Inc., Wilmington, Del. Application February 20, 1943. 12 claims.

Feedings, Folding and Delivery

2,412,047. WEB FEEDING AND SLITTING MECHANISM for cutting webs into ribbons is especially useful in combination with a drag roller, such as is usually positioned over a former roller for simultaneously slitting a number of webs and, in cooperation with the drag roller, feeding the webs to and over the former, but it can also be used elsewhere in the printing machine. Use of the device of the invention is said to eliminate the necessity for using pressure rollers or "trolley rollers" to press the web or webs against the drag roller. A combined web slitter and web presser member is provided for use in cooperation with an abutment roller to slit and feed webs. The web presser is driven in unison with a rotary slitting knife and arranged to engage the web edges adjacent the place where the web is split and to press the edges against the abutment roller, thereby moving forward the ribbons cut from the web. Invented by William F. Huck, Forest Hills, N. Y. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application September 8, 1944. 11 claims.

2,412,132. DELIVERY MECHANISM OF A PRINTING PRESS, which is suitable both for offset lithographic printing and for direct printing, and which may include a pile feeding elevator so that a large pile of sheets can be printed. A similar pile-moving mechanism for lowering the pile at the discharge end of the press, recognized as desirable, is made more practicable by this invention. Heretofore its provision was complicated by the necessity for delivering sheets at two different positions in order to turn the lithographed sheets over in a simple manner. This optional turnover also complicated the timing situation with respect to the joggers, which would be


We Resolve
To continue offering engravers the best possible metals for every purpose.
To continue producing quick, clean etching, precision-rolled plates... melted and cast in the electric induction furnace.
To continue providing metals with the famous machine-cut finish.
To continue laboratory control over production, plus further research and development work.
Signed: The makers of
ZOMO-ZINC AND A-Z-ALLOY
ZOMO-ZINC
SPECIFY THESE METALS IN 1947...
...AND LOOK FOR THE TRADE MARK ON EVERY SHEET
A-Z-ALLOY

provided in connection with the pile mechanism, since the sheet would naturally take longer to get to the jogger when turned over than when not turned over. Present invention overcomes these difficulties by providing a simple mechanism for carrying the sheets to the pile stacking mechanism from either of the two positions of release from the press and for correcting the timing of the joggers to fit the circumstances. Receiving of the sheets is accomplished by a simple form of extensible and tiltable conveyor. In extending the conveyor, it is not necessary to make any adjustment since the belts are automatically paid out as the extension requires. Invented by Edward F. Dell, Chicago, Ill. Assigned to Davidson Mfg. Corp. Application December 5, 1942. 15 claims.

Miscellaneous

2,411,811. LIGHT SENSITIVE MATERIALS which are useful in photoprinting positive and negative prints from originals. The material may be paper, foil, glass, metal or textiles that are coated with a light sensitive N-nitroso N-arylamide, an azo coupling component and a weak acid such as acetic. The photoprinting material is exposed to light from any light source through an original and the image developed by contact with ammonia fumes. A textile base, in one example, was allowed to dry in the dark after being coated and was then exposed to light through a stencil. It was then placed in a solution of 10 parts R-salt, 20 parts sodium carbonate in 500 parts of water. When it was washed and dried the stencil design was reproduced in bright red on a clear background. Invented by Donald Edward Sargent, Easton, Pa. Assigned to General Aniline & Film Corp., New York, N. Y. Application February 1, 1945. 18 claims.

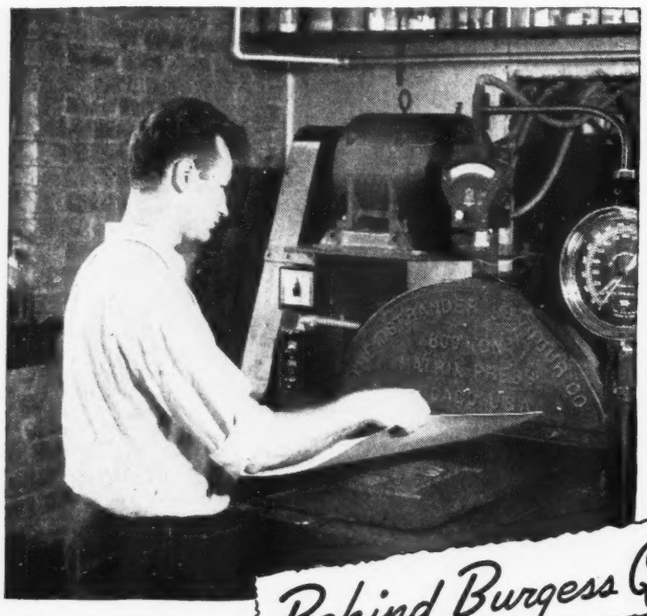
Plate Making

2,412,317. LITHOGRAPHIC PLATE-MAKING APPARATUS for printing a developed film on a sensitized metal plate and for fully processing it for use as a lithographic plate in a printing press. The application for this patent was a division of that for patent 2,390,497 reported in the January, 1946, issue of *Printing Equipment Engineer*. Whereas the earlier patent claimed the apparatus for processing the plate, this patent claims the apparatus for processing the film preparatory to making the plate. The apparatus is within a suitable housing disposed through and within a dark room wall; the film is developed in the dark room and transferred for further processing outside the dark room as disclosed by the earlier patent. The apparatus for processing the exposed film comprises an insulated support within which is nested a temperature controlled sink containing developing and fixing trays partially immersed within a fluid in the sink. A fluid source is provided for the washing tray which has a removable stand pipe. A drain pipe extends below the bottom thereof and may be removably inserted into a stand pipe in the sink. A second drain pipe is joined to the sink stand pipe and is disposed through the sink and insulated support for conducting fluid from the wash tray independent of the fluid state within the sink. Invented by James T. Campbell, Detroit, Mich. Unassigned. Original application December 31, 1942, divided and this application March 22, 1944. 4 claims.

Printing Inks and Related Chemicals

Reissue 22,812 of 2,385,920. PLASTICIZATION OF PLASTICS to form a printing ink which dries very rapidly. The product may be prepared by suspending a very finely-divided thermoplastic plastic, such as ethyl cellulose, and a plasticizer in a non-solvent for the plastic. Coloring matter, such as carbon black, dye, etc., is included in amounts of 10% and upward. Drying oils, such as linseed, tung and the like, may be included in amounts up to 20%. When this ink is applied to paper by a press the paper immediately absorbs much of the dispersing liquid, leaving the plastic in the desired pattern. Need for extensive driers is said to be eliminated by use of this ink. Invented by John D. Jenkins, Milwaukee, Wis. Assigned to Pittsburgh Plate Glass Co., Allegheny County, Pa. Application for reissue September 27, 1946. 9 claims.

2,411,832. WATER-INSOLUBLE SOAPS which can be used in the manufacture of ink are prepared from water solu-



PRE-TESTED...TO PROTECT YOU

Did you ever wonder why Burgess Chrome Mats are so uniformly satisfactory? Well... here's one of the reasons. Samples from every run are thoroughly tested on a molding machine—either direct pressure or roller—put through just as you would use them... given a real tough form to reproduce. They've got to come out O.K. or the whole run is rejected. And this is just one of a whole series of tests that each run of Burgess Chrome Mats is subjected to.

A Laboratory Product BURGESS Chrome MATS

No... we don't take any chances... and it's for your protection. It's our job to see that your Burgess Chrome Mats will do their job 100%. And from what Burgess users tell us, we've been remarkably successful.

BURGESS CELLULOSE COMPANY
Manufacturers and Distributors of Burgess Chrome and Tone-Tex Mats
FREEPORT, ILLINOIS
Pacific Coast Representative RALPH LEBER CO., 426 Polson Bldg., SEATTLE, WASH.

ble soaps by metathesis. A solid granular salt of one metal is added to a water solution of a water soluble soap of an organic acid, preferably a fatty acid, and a second metal to form a water insoluble soap of the acid and the first metal by metathesis. The mixture divides into an aqueous phase and an insoluble soap phase. Phases are separated and the water and solid inorganic impurities are separated from the soap. Copper, iron, barium and the like are preferred for use in this process. The process for forming copper napthenate differs from the conventional process because no naptha is added to the reaction mixture, thus eliminating fire hazards, and no water washing is necessary as the impurities are driven off by heating or dissolved in an added solvent. Invented by Hooper Linford, Manhattan Beach, and William J. Baral, Long Beach, Calif. Assigned to Union Oil Co., Los Angeles, Calif. Application July 27, 1942. 7 claims.

2,411,954. TREATMENT OF POLYUNSATURATED ESTERS, with polythiols and products produced thereby, to produce a new composition which may be added to resins, gums, pigments and the like, to make printing inks and products useful in impregnating paper and cloth. Composition comprises the polymeric addition product of a monomeric hydrocarbon polythiol and a polymeric polyunsaturated ester of a polyhydric alcohol with an unsaturated acid which is, apart from the carboxyl group, hydrocarbon. Invented by William James Burke, Marshallton, Del. Assigned to E. I. du Pont de Nemours & Co., Wilmington, Del. 15 claims.

2,412,176 and 2,412,177. PREPARATION OF DRYING OILS FOR USE IN PRINTING INKS from fatty oils including drying and semi-drying vegetable oils and marine oils. Process comprises heating a mixture of a major proportion of a semi-drying oil and a minor proportion of a drying oil with from 1 to 7 per cent on the weight of the oil of a polyhydric alcohol until reaction is complete. Then the reaction product is esterified with 1 to 7 per cent on the weight of the oil of a polybasic acid of the class consisting of polycarboxylic acids and their anhyrides, to form an oil of low acid number. Invented by Alexander Schwarcman, Buffalo, N. Y. Assigned to Spencer Kellogg and Sons, Inc., Buffalo, N. Y. Applications February 12, 1943. 10 and 12 claims, respectively.

Printing Presses and Equipment

2,411,739. MACHINE CLUTCH of the C. B. Cottrell & Sons Co., is of the one-way type and is placed within a fixed housing having two heads. Aligned drive and driven shafts are mounted in the respective heads and have overlapping inner ends superimposed on each other. A combined friction and one-way clutch member is fixed to the inner end of the drive shaft, and a one-way clutch is fixed to the inner end of the driven shaft. A spring-pressed friction clutch slidably locks to the driven shaft. Friction discs connect the clutch with the combined friction and one-way clutch and rotative eccentric automatically lock the combined friction and one-way clutch member with the one-way clutch when the driven shaft tends to overrun the drive shaft. A mechanism is provided for adjusting the pressure of the spring of the spring-pressed friction clutch on the combined friction and one-way clutch to a point where the starting and acceleration of the drive shaft up to its normal speed will cause a corresponding starting and acceleration of the driven shaft. Invented by Hans J. Luehrs, Westerly, R. I. Assigned to C. B. Cottrell & Sons Co., Westerly, R. I. Application March 17, 1943. 3 claims.

2,411,943. NEW RUBBER COMPOSITION which can be used in printers' rolls is made from natural and/or synthetic rubber and a carboxylic acid ester of one of a group consisting of indanols and alkyl substituted indanols. Additives, such as stearic acid, pine oil, reenforcing pigments such as channel black and whiting or the like, and barite fillers are added as desired. The esters of the indene-type alcohols are formed by the reaction of the alcohol with monobasic acids, such as formic or acetic, or with other fatty acids. Products ranging from very soft to so-called hardrubbers can be obtained at will. Invented by Frank J. Soday, Baton Rouge, La. Assigned to The United Gas Improvement Co., Philadelphia,

---

NEED MORE HELP IN YOUR PLANT?

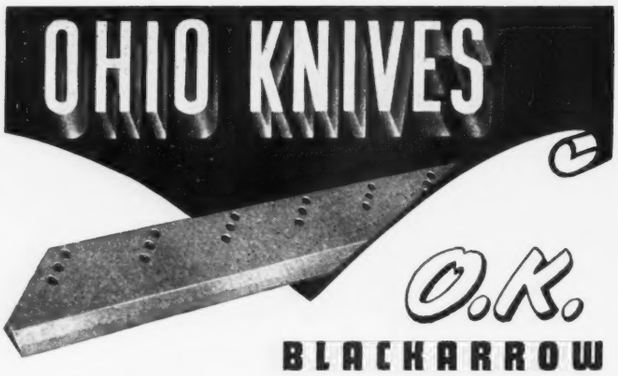
Better look into TELETYPESETTER

With the aid of Teletypesetter many users have boosted production of machine-set straight matter as much as 100% — and you can share in this increased output by putting Teletypesetter to work in your composing room.

Magic? Not at all — just punch a tape with the Teletypesetter Perforator, put the tape in the Operating Unit — and your composing machine casts the slugs *automatically*. It's easy to see how Teletypesetter can save you time, money and errors. Why not learn how you can have more help in your plant — with Teletypesetter. Write today.

TELETYPESETTER CORPORATION
1400 Wrightwood Ave., Chicago 14, Ill.

TELETYPESETTER
REG. U. S. PAT. OFFICE



O.K.

BLACKARROW

PAPER TRIMMING KNIVES

● They give 25 to 40% longer service. Give better cutting at lower cost—proven under severe test in America's largest paper mills and printing plants. Made of a new alloy to withstand heavier cutting and still hold a keen edge for long runs. Ground with a slight concave and taper on the face for clearance—smooth cutting.

MAIL TODAY

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

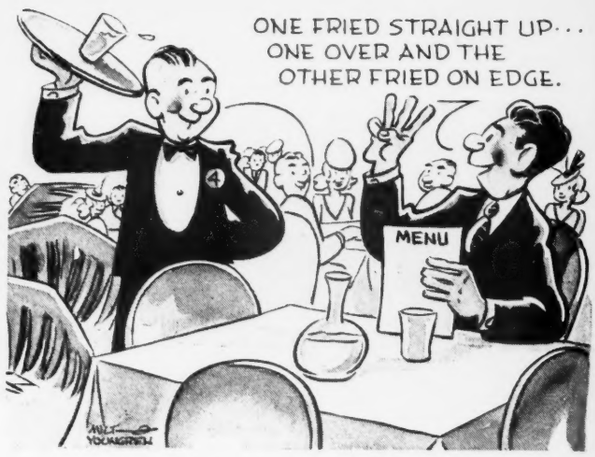
Gentlemen: Please send without obligation specific data on knives I have checked.
☐ Trimmer ☐ Revolving Cutter ☐ Slitter

COMPANY_____

NAME_____

ADDRESS_____

The **OHIO KNIFE** *Co.*
CINCINNATI 23, OHIO, U. S. A.



THIS IS PITMAN SERVICE

THE one on edge may take longer but if it's possible we will fill the order. PITMAN never says, "You're the only one who ever asked for it." We supply *all* your requirements for METAL, CHEMICALS, EQUIPMENT and SUPPLIES for PHOTO-ENGRAVING and LITHOGRAPHY. Our regular service includes demonstrations of PITMAN products and special processes.

HAROLD M. PITMAN CO.

CHICAGO • NEW YORK • CLEVELAND • BOSTON • DALLAS

Pa. Application February 12, 1944. 10 claims.

2,412,243. ADJUSTING AND DRIVING MECHANISM which can be used on printing press rollers. The gears of the mechanism are constantly in proper and accurate mesh with the roller in all of its various operating positions and the need of a great many gears and the use of sliding connections are obviated. An annular gear having internal and external teeth has its axis in alignment with the axis of an eccentric bearing of a printing roller. Power may be transmitted to this annular gear through the exterior teeth. The interior teeth may mesh with a pinion on the roller so that as the position of the bearing of the roller is adjusted by the rotation of the eccentric bearing, the pinion of the roller will be maintained in proper mesh with the eccentric bearing. Thus, there is only a single gear for transmitting power from the driving gear to the gear of the roller and proper meshing with both is maintained at all times. Invented by Herbert C. Behrens, Haddon Heights, N. J. Assigned to Samuel M. Langston Co., Camden, N. J. Application October 19, 1943. 7 claims.

For Patent Research in the U. S. Patent Office, or a prompt estimate on any type of search, address INVENTION, INC., Munsey Bldg., Washington, D. C.

Directors Elected

At the 62nd annual meeting stockholders' of the Goss Printing Press Co. recently, H. H. Elliott was re-elected chairman of the board of directors. At the directors' meeting immediately thereafter, the following officers of the company were elected for the coming year: R. C. Corlett, President; J. A. Riggs, Executive Vice President and General Manager; C. S. Crafts, Vice President and Chief Engineer; C. S. Reilly, Vice President and Sales Manager; W. T. Goss, Vice President; F. G. Tuttle, Secretary and Works Manager; and K. J. Williams, Treasurer.

It was reported that more than $30 million in orders was on hand. There is important business in small presses in India and the Far East.

Both the Chicago company and its subsidiary, Goss Printing Press Co., Ltd., of England are quoting three to four year deliveries. The company reports orders for equipment used to print the following magazines: *Life*; *Collier's*; *Reader's Digest*; *McCalls*; *Popular Mechanics*; and Fawcett Publications. Among the larger newspaper orders reported are: New York *News*; Chicago *Tribune*; Louisville (Ky.) *Courier-Journal*; Atlanta (Ga.) *Journal*; St. Louis (Mo.) *Star-Times*; Toronto (Can.) *Star*.

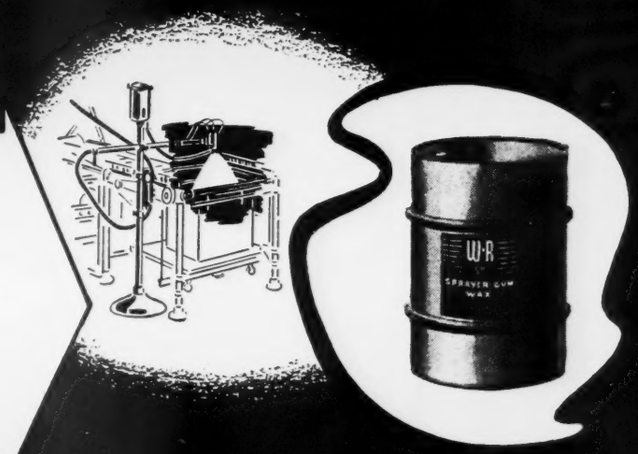
Pressman's markup booth in plant of William Feather Co., Cleveland, O. This rather prosaic and uninteresting looking picture will mean a lot to commercial pressmen marking up their makeready sheets. The casing of this makeready booth is painted dead black. The desk is covered with white heavy board and the light cast by the hooded fluorescent fixture is spread evenly over the work sheet.

Prevent Offsetting!

GIVE YOUR CUSTOMERS A CLEAN JOB *with*

W-R SPRAYER GUN WAX

- Can be used on all colors successively. No sandpaper effect.
- Harmless to press and operators. Safe to use on food labels and wrappers.
- Makes a fine, light spray or mist that is almost invisible.
- Absolutely colorless. Will not affect the most delicate tints or colors



W-R PROCESS COLOR WAX

- Mixes with any lithograph, offset or letter-press inks —colors or black.
- Assures perfect lifting and blending of colors. Simplifies printing of solids.
- Prevents offsetting, mottling, picking and sticking. Keeps inks from crystalizing.
- Indispensable for transparent colors and process work.

have been standard equipment for nearly half a century

Packed as follows:

W-R SPRAYER GUN WAX	W-R PROCESS COLOR WAX
1 gallon cans	1 pound cans
5 gallon cans	5 pound cans
55 gallon drums	25 pound cans

See your dealer or write for trial shipment today!

BEVERIDGE
DRY MATS
are Dependable

SAMPLES TO YOUR SPECIFICATIONS
GLADLY SENT GRATIS UPON REQUEST

New Products Division
THE BEVERIDGE PAPER COMPANY
INDIANAPOLIS 4, INDIANA

60 YEARS OF PAPER MAKING SKILL

Quote . . . "*Your*
CUSHMAN *Offset* **MOTOR**
was installed on my Model 14 yesterday by Mr. _____. The machine is so quiet now I don't recognize it!"

CUSHMAN
INSTRUCTION
and
PARTS BOOK
AVAILABLE

Cushman Motor Division

LINOTYPE PARTS COMPANY
WEATHERLY, PENNA.

S. E. Arnett, Sales Manager of Electric Boat Co.'s Printing Machinery Div.

Harold Gegenheimer, Supervising Engineer of Electric Boat Co.'s Printing Machinery Div.

Establishes Printing Machinery Division

The Electric Boat Co. of Groton, Conn., has announced the formation of a Printing Machinery Division. The organization will manufacture, merchandise and service Graphic Arts machinery. Other divisions of the Electric Boat Co. manufacture submarines and other precision built products. The company maintains its own motor plant, foundries and machine shops.

Stuart E. Arnett, formerly sales manager of the Harris-Seybold Co.'s New York area has been appointed sales manager of the Printing Machinery Div. He has been associated with the printing and lithographing industry since early youth. He started working after school as an errand boy for a Detroit printer. He has since worked as a pressman, compositor, cost accountant and salesman of printing, lithography and Graphic Arts equipment. He received his college education by attending night classes. During the war, he was an aviation engineering officer in the U. S. Marine Corp.

Harold Gegenheimer, formerly chief engineer of the press section and plant manager of the Rutherford Machinery Div. of Sun Chemical Corp., has been appointed supervising engineer of the Printing Machinery Div. Mr. Gegenheimer is the son of William Gegenheimer, who is well-known in the Graphic Arts equipment field. Prior to his association with the Rutherford Machinery Div., Mr. Gegenheimer was associated with his father in the development of the Willard offset press. He is a graduate of Georgia Tech.

The sales office of the Printing Machinery Div. is at 33 Pine St., New York, N. Y.

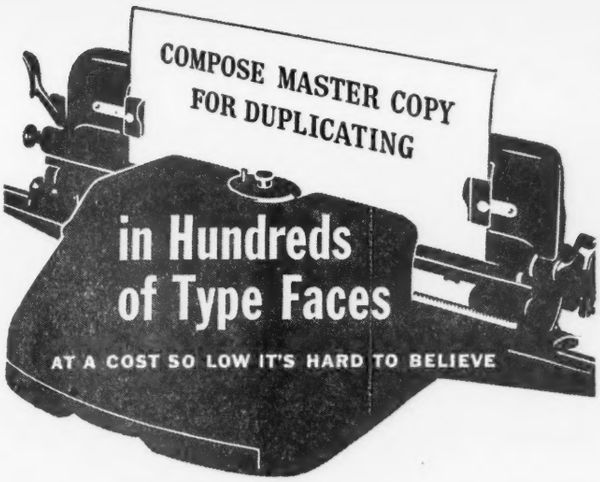
Details of a 22 in. by 34 in. single color Willard offset press will be announced soon.

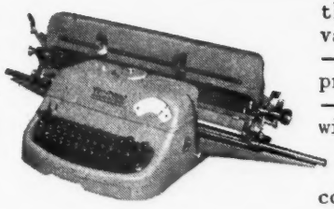
Essay Judges Selected

The judges who will select the thirty national prize winners in the 11th Annual Essay Contest sponsored by International Printing Ink in cooperation with the National Graphic Arts Education Association were recently announced.

Harry L. Gage, Vice President of Mergenthaler Linotype Co., will be chairman of the five-man jury. Others selected are: Harold E. Stassen, former Governor of Minnesota; Lowell Thomas, radio news commentator; Wesley A. Sturges, Dean of Yale University School of Law; Norman Chandler, President of the Los Angeles *Times*.

The subject of this year's essay is *Printing's Place in the Postwar World*. Each school selects the two best essays submitted by its students; and these, in addition to receiving local prizes, become eligible for the national awards.





For jobs where you want the good appearance and variety of type-set copy —but where economy and profit are also important —nothing even compares with VARI-TYPER*!

VARI-TYPER is the *only* composing machine on which you can set type, in more than *300 faces,* from 5 to 18 point, using a *letter keyboard that's just the same as the one on a typewriter!* And you can change from one type font to another in just a second or two!

Copy that's unrolled from VARI-TYPER is *reproduction copy*—clean and sharp...with automatically justified margins...with any desired horizontal or vertical spacing...display and bold or highly condensed...ready for offset, Mimeograph or Ditto!

Just think of what you gain with a VARI-TYPER. A complete variety of printed effects, ready quickly without delays, bringing profits and savings that often average *50% of the cost of the entire job!* It is the most profitable equipment in many offices!

Arrange for a free demonstration of this compact, inexpensive machine at your own office or plant...send for a variety of VARI-TYPED samples ...Write today to DEPT. PE-1, Ralph C. Coxhead Corp., 333 Avenue of the Americas, New York 14, N.Y.

VARI-TYPER is profitably used by thousands of:

- DAILIES
- WEEKLIES
- MANUFACTURERS
- DIRECT MAIL SERVICES

For composition of inexpensive:

- PROMOTION PIECES
- MARKET STUDIES
- REPORTS
- TABULAR MATTER
- FORMS, RECORDS
- HOUSE ORGANS
- MANUALS
- RATE CARDS
- AND HUNDREDS OF OTHER JOBS!

Text set by VARI-TYPER in Bodoni Book series.

*Reg. U. S. Pat. Off. & Foreign Countries
Marca Registrada
Marca Deposée

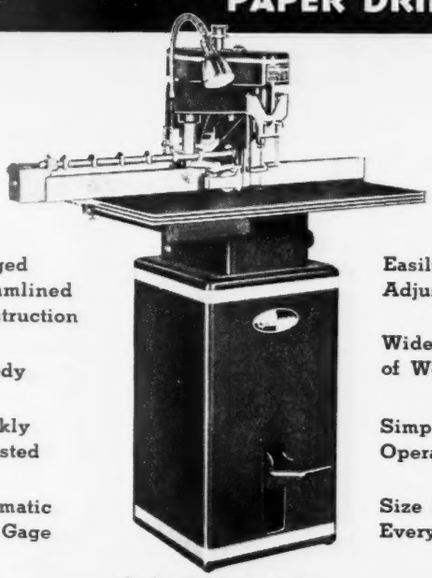
Vari-Typer

Composing Machine

—RALPH C. COXHEAD CORP.—

333 AVENUE OF THE AMERICAS, NEW YORK 14, N.Y.

● *Eliminate*
PRODUCTION BOTTLENECKS
● with
CHALLENGE
PAPER DRILLS



Rugged Streamlined Construction

Speedy

Quickly Adjusted

Automatic Trip Gage

Easily Adjusted

Wide Variety of Work

Simple to Operate

Size for Every Shop

(Style E Illustrated)

● *Step-up* **SALES** *and* **PROFITS**

Make Your Shop Independent of Crowded Binderies—

● Buy a Challenge Paper Drill to fit the needs of your plant and avoid those troublesome delays in the bindery. With attachments you can do all classes of slotting, slitting and cornering as well as round hole drilling. Thus allowing you to do novelty work of all kinds.

Automatic Trip Gage can be pre-set for any arrangement of holes up to six or more stops, allowing operator to keep both hands on stock. Motorized drill head operated by hand lever, foot power, or electro-hydraulic mechanism.

Orders are being scheduled for delivery in the sequence received. ***Place Your Order Now!***

539

THE CHALLENGE MACHINERY CO.

"Over Fifty Years in the Service of the Graphic Arts"

Main Office and Factory: **Grand Haven, Mich.**

Cut Your Cut Mounting Time

You want to do every job the easiest way, don't you? Easier, faster, yet sure and practical—that's the job Booth's Zink Cut Cement does for you. Booth's Zink Cut Cement is a one-purpose cut mounting adhesive, and comes to you in a tough, handy tube dispenser. It holds any kind of cut, electro, or shell cast stereo to either wood or metal base.

Keep a supply of Booth's Zink Cut Cement on hand for your compositors. You'll find it not only cuts cut mounting time, but it provides inexpensive insurance against delays in your make up and stereo rooms.

PRICES: In the United States: 75c per tube, $6.00 a dozen tubes, $5.00 a dozen in gross lots.

Booth's Black Rubber Rolls

Like to hear your machine operators humming a tune, and not singing the blues about balky, unresponsive keyboards?

That's where Booth's Black Rubber Rolls come in. On your line-casting machine keyboard roll shafts they give long, trouble-free service because they provide maximum cam tread friction and maintain an even diameter when installed correctly.

For smooth running composing machines, use Booth's Black Rubber Rolls.

PRICES: $1.45 per pair; $7.75 per doz.

E. A. BOOTH RUBBER CO.

MAHONING BANK BUILDING

YOUNGSTOWN, OHIO

Publisher, Mechanical Superintendent, Composing Room Foreman and Machinist,

. . . all are enthusiastic about the new

STAR
CLOSE-RANGE
THERMOSTAT
(PART NO.-M-34)

Linotype-Intertype-Elrod

NO SERVICING

NO PARTS TO REPLACE

NO CONTROL BOX

Write for technical description

ACE BELTS *have what it takes to make all drives 100% efficient*

PRECISION
TRADE ★ MARK

LINOTYPE PARTS COMPANY

Factory and Main Office:
WEATHERLY, PA.
Branch Office: 314 WEST 10th STREET, KANSAS CITY 6, MO.
CHICAGO • MINNEAPOLIS • DENVER

Hammond
OF KALAMAZOO

EASYKASTERS

EASIER
FASTER and
BETTER CASTING

3.
Popular Sizes

5 Column	x	18 inch
6 Column	x	24 inch
8 Column	x	Full Page

Hammond Machinery Builders INC.

1604 DOUGLAS AVENUE • KALAMAZOO 54, MICHIGAN

Up With Production—Down With Static

THIS is the title of a four page bulletin published by The Takk Corporation. Illustrated and described is the Takk Static Eliminator for printing presses, folding machines and special process machines. Manufacturer states secret of successful operation under production conditions is in the engineered construction of the targets, the points, the relative position of targets to points, positive control of ionic discharge and balanced electronic design. Bulletin obtainable from Takk direct or through *Printing Equipment Engineer*.

Marketing Service for New Inventions

A marketing service for new inventions has recently been announced by the firm of National Merchandisers, according to E. Millard Smith, Executive Director. "The purpose of the new division," Smith says, "will be to help the small or average inventor from the beginning or birth of his idea until the invention has been properly developed for manufacturing operations, or is on the market as a finished device or article." Much of the firm's activity will be centered around engineering analyses, market surveys and invention sales.

Inventions will be investigated, those not acceptable will be returned to their owners. Those which show promise mechanically or commercially are called to the attention of logical users and buyers, who thereafter negotiate either directly or indirectly with the inventor.

An outline of the firm's methods is described in a new booklet, *A 12 Point Program for Inventors*. Readers may secure a copy by writing National Merchandisers, 28 East Huron St., Chicago 11, Ill.

Printing Equipment Engineer will be glad to help you locate the source of supply.

Photography and Platemaking for Photolithography

by I. H. Sayre

This book is an instruction book and an encyclopedia, both for the beginner and the experienced offset-lith platemaker. Revised edition. Illustrated. New section on color process platemaking techniques included.

Price $6.00 per copy. May be ordered through PRINTING EQUIPMENT ENGINEER, 1276 West Third St., Cleveland 13, Ohio.

Because of narrow handling margin, please send cash with order.

Cut Make-ready costs with

OPTI-CHEK

You can set up color plates for perfect register in a matter of minutes instead of hours—without use of measuring devices. Puts an end to waste of paper, cellophane, ink, etc. — No more idle presses. Made in various widths to accommodate any printing. *Write for more information.*

H. H. HEINRICH CO.
200 VARICK STREET NEW YORK, NEW YORK

The Royle Router

- A large table mounted on a rigidly constructed column.
- Convenient alignment and tightening of driving belts.
- Running parts designed to reduce vibration.
- Sufficient speed at cutter edge to route fine or rough out without reducing speed.
- Precisely fulcrumed elevating mechanism assures immediate reaction to pressure on the foot pedal.
- Changing cutter heads a matter of seconds.
- Speed and balance are built into Royle Routers.

JOHN ROYLE & SONS

Established 1855

10 Essex Street Paterson 3, N. J.

SYNTRON

"VIBRATING"

PAPER JOGGERS

for Ease, Speed and Economy

—in handling all types of stock, from onion-skin to heavy board.
—at the press or the cutter.

SYNTRON-patented "Controlled Vibration" also quickly aligns troublesome snap-outs, carbon interleaves, etc.

Write for Descriptive Folder

SYNTRON CO.

577 Lexington
Homer City, Pa.

PRINTING EDUCATION WEEK

THE 19th annual printing education week is scheduled for January 13-17, 1947. This year The Franklin Institute, The International Benjamin Franklin Society, Inc., Printing Industry of America, Inc., and International Printing Ink Div. of Interchemical Corp. are cooperating with the National Graphic Arts Education Association.

A feature of the Franklin celebrations in schools is the 11th annual essay contest. Subject of the essay this year is *Printing's Place in the Post War World.* First prize of $500 may be applied as a scholarship in any accredited college.

President Byron G. Culver of National Graphic Arts Education Association says: "Every school should plan a program. Support and cooperation should be sought from employing printers, local clubs of Printing House Craftsmen, civic groups, newspapers, and community leaders. Community events as well as school programs should be arranged. Association members should be the spark plugs for Printing Education Week everywhere.

"It seems to me that this year Printing Education Week should have a special importance. If ever we needed to consider the philosophy of Benjamin Franklin, we need it now. We are living in a confused and distorted time in which the homely and direct wisdom of Franklin might save us all from disaster."

New RIT Bulletin

The Rochester Institute of Technology has issued its bulletin for the 1947-48 season. Six pages are devoted to the Publishing and Printing Department. Laboratories, classrooms, offices and library of the department cover over 25,000 sq. ft. of floor space.

The objectives are stated to be to prepare each individual for a useful, professional career in the industry and in connection with this training, help him develop as a well rounded citizen. Individual objectives are served by selection of specific area of emphasis.

The program is designed to permit a high degree of individualization after completion of basic work.

A student may follow a general schedule or may choose an optional area of emphasis such as: production and management, either in letterpress printing or in offset lithography; hand composition; machine composition; monotype; letterpress or offset presswork; offset camera work; offset platemaking and tone correction; printing design and layout including advertising.

Full time or cooperative courses are available.

Attractive Broadside

An attractively printed and illustrated broadside has been received from the House of Plantin, type foundry, repair and supply house of Brussels, Belgium. Nineteen halftone views of the type foundry, ink and roller departments and showrooms are shown. According to Pierre Oly, Vice President, the firm has been in business 25 years. One of the services it performs for printers and book binders of the low countries is to import printing equipment.

Regraining Offset Plates

From address by Hon. A. E. Giegengack, U. S. Public Printer, at National Association of Photo-Lithographers Annual Convention in Washington, D. C.

ONE of our scheduled research problems is the removal of the plate image without regraining. As you know, there are chemicals as well as patent formulas for this purpose. Several years ago we did some work along this line, but it did not give us the results we wanted. Many of our short-run jobs are handled by offset, so the image-removal would be an economical step if we would eliminate altogether the chances of the original image working up. For example, we recently contemplated setting up a new unit for the production of a huge backlog of Patent Office reprints. The runs are extremely short, and a never-failing method of reusing the plates without regraining would be valuable. Yet our present graining operation has been streamlined and systematized. We grain our plates in 22 minutes, and that is not too bad.

FAITHFUL MIDDLETONES
STAYBACK
SOLID BLACKS
From skipper on down, skilled stereotypers bet on Wood Dry Mats for dependable performance.
DEEP MOLD
CLEAN HIGHLIGHTS
PLASTICITY
WOOD FLONG CORPORATION
HOOSICK FALLS • NEW YORK
New York City Office:
551 FIFTH AVENUE, NEW YORK 17, N. Y.

Specialization pays off

THREE WAYS

It took years of specialization on printing industry metals to give highest quality in type metal—quality that reduces costs and gives top performance under severe conditions. Yes, Imperial's 34 years of specialization pays off in your composing rooms and stereotype departments.

PROVE THIS FACT TO YOUR OWN SATISFACTION

Imperialize your plant at the earliest moment. Then watch for the Imperial specialization pay off—sharper, cleaner impressions, fuel saving, less dross and lower yearly metal costs. Here's type metal quality at its peak.

GET ALL THREE WITH PLUS PLAN CONTROL

You'll find that Imperial's Plus Plan is used in over half the daily newspapers and job plants in the United States—proof that Imperial quality, performance, and services are tops. Why not get all three? Adopt the Plus Plan today. Write for full details.

IMPERIAL TYPE METAL CO.

Serving the Graphic Arts Industry Only

Philadelphia 34 New York 7 Chicago 50

Imperial

tags
20 STOCK COLORS IN A DOZEN GRADES AND WEIGHTS
PLAIN TAGS made single, gangs, continuous strips; brass eyelets, numbers, perforations; slits, scoring, holes and slots.
PRINTED TAGS in one or more colors, one or both sides; numbered, with strings, wires, hooks, barbs or deadlock fasteners attached; or separate.
ALL SIZES: standard, special or oversized in manila, sulphite, jute, rope, cloth.
DIE-CUT TAGS, printed in multiple colors, strung, packed in plain boxes.
STOCK AND SPECIALTY TAGS:
SOLD TAGS
REPAIR TAGS
BAGGAGE TAGS
MARKING TAGS
NUMBERED TAGS
SHIPPING TAGS
ALTERATION TAGS
PRODUCTION TAGS
STRING PRICE TAGS
SPECIAL SALE TAGS
WATCH REPAIR TAGS
TAG ENVELOPES
RECEIPT ENVELOPES
FLORIST TAGS
FLORIST ENVELOPES
STRINGING
CONVERTING
LET US QUOTE YOU ON
STRINGING your straight-cut or die-cut booklets, pamphlets, folders or cards. Punched and strung, tied in 100's and boxed.
CONVERTING of your plain or printed stock: patching, eyeletting, cornercutting, stringing, wiring, etc.
Please mention this publication when writing
YOUR STOCK
STANDARD TAG CO.
ESTABLISHED 1925
TAG MAKERS AND STRINGERS TO THE TRADE
MODERN FACTORY AT:
65 DUANE STREET, NEW YORK 7, N. Y.
Bet. Broadway & Lafayette St. Tel. WOrth 2-3296
COPYRIGHT 1946, STANDARD TAG CO.

YOU'RE RIGHT ON THE TARGET...

WITH THIS NEW MODEL "45" C&G SAW TRIMMER

INSTANT, Accurate Saw Blade Adjustment. Just as easily and fast as pulling the trigger of a "45", the saw on the Model "45" C & G Saw Trimmer can be raised or lowered to exactly the sawing height required. A screw adjustment, accurate to .001 of an inch, always available.

STURDILY MADE, from new, light metals, the Model "45" Saw Trimmer includes such time-saving features as the Positive Work Holder, Right and Left-Hand Miter Vise, Chip Chute, Improved Angle Gauge.

Write for Illustrated Folder covering Model "45" Saw Trimmer and Accessories.

THE MORRISON COMPANY
(Formerly Milwaukee Saw Trimmer Co.)
125 W. MELVINA STREET, MILWAUKEE 12, WISCONSIN

Announcement is made by The C. M. Kemp Mfg. Co., Baltimore, Md. of the advancement of Frank J. Kohut to the post of general manager. Formerly sales manager and chief of development, Kohut will now supervise production, engineering and other functions. The company produces equipment for industrial process heating, gas mixing, atmosphere generation, moisture control, and soft-metal melting.

Samuel M. Terry, chemist, has joined the staff of Battelle Institute, Columbus, O., where he will be engaged in research in graphic arts technology. Mr. Terry is a graduate of Vanderbilt University and a member of the American Chemical Society. He was formerly associated with the Publicker Industries, Inc., Philadelphia, Pa.

"Neoprint" Letouzey Method of Letterpress

(Continued from Page 17)

has been adopted as standard for the type of paper normally printed in the Letouzey Works. The thickness of the different sheets is measured in the ordinary way, and the hardness figures for the various components are obtained with Shore Scleremeter.

The ideal packing would obey Hooke's Law (deformation strictly proportional to pressure applied, and immediate and complete recovery on removal of the pressure), and pressure in one region would not give rise to swelling in a neighboring part. This ideal cannot be attained completely, though it seems possible that new and improved forms of cylinder covering may be devised in the future. That used by M. Letouzey, however, seems quite satisfactory, for after a run there are few, if any, signs of deformation or embossing, and recovering the cylinder is only necessary at comparatively long intervals—about once a month.

The Printing Elements

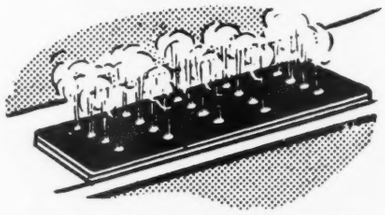
Whether the printing elements are type, engravings, line or halftone cuts, the ideal is to mount them in the form in such a way that no adjustments of the press are necessary when the form is placed in on the press bed. *This requires care and measurement at every stage, and it can hardly be emphasized too much that the press itself, the form, the bed and the cylinder must be in perfect mechanical condition and in a cleanly state. The presence of even a small amount of dirt may affect adjustments to a marked degree.* The printing elements themselves may be made in a variety of materials. With regard to the type itself, it is important that the base and face should be truly square with the shank. It must be sufficiently strong to resist the printing pressure without bending or collapsing. The sides should be plane, parallel and should show no signs of roughness. The variations in the heights of the different characters are brought about by altering the depths of the Monotype or Linotype matrices.

Electros and Stereos

It is worth noting that there is no *theoretical* reason why stereos or electros should not be made up in forms according to the Letouzey method. In practice, however, the reproduction of the printing surface of the ordinary stereo plate is not

STEREOTYPE PERFORATED GUMMED PACKING FELT

Important where considerable shrinkage is employed



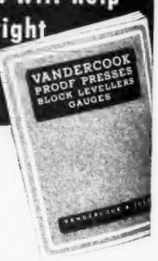
Manufactured under Patent No. 1,967,444

Is More Flexible • Forms with the Mat • Dries Faster • Sets Instantly

Send for a Trial Order Today — Sheets or Cut Strips

American Publishers Supply
P. O. Box 924 Lynn, Mass.

This Booklet . . . will help you choose the right PROVING EQUIPMENT



Contains twenty-five illustrations and brief descriptions of Vandercook Proof Presses, Block Levellers and Gauges—enabling you to compare one with another, and thus determine which best suits your needs.

VANDERCOOK & SONS, INC.
900 N. Kilpatrick Ave., Chicago 51, Ill.

VANDERCOOK
PREMAKEREADY EQUIPMENT

AVAILABLE

ADV. & SALES EXEC.

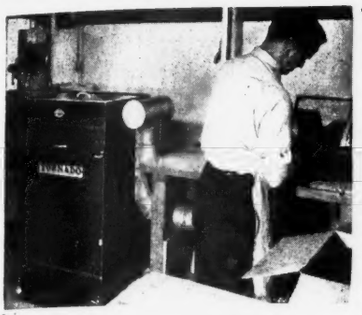
for printing equipment manufacturer; or printing or folding box plant; or paper manufacturer or converter

A practical all-round merchandising man of diversified creative and administrative abilities. Now with leading graphic arts machinery manufacturer. Many very effective campaigns and promotions based on sound analysis of sellers' products in terms of buyers' interests. Independent thinker but cooperative organization man. Understands departmental coordination, company policy and "profit motive." Married. Energetic. Reputable. For details, write Box No. 264, Care Printing Equipment *Engineer*.

WANTED MECHANICAL SUPERINTENDENT

For Newspaper, familiar with composing room, stereo, and press work. Reply stating age, marital status, experience and approximate salary required.

Box J. W. R., McKim Advertising Limited, Montreal.



Down with Dust
Up with Health
and Production
with
TORNADO DUST COLLECTORS

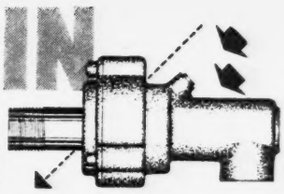
LARGE filter surface area in TORNADO Dust Collectors insures efficient collection of all types of dust and lint. Fifteen large, long filter tubes sift and cleanse the air for reuse.

Tubes catch all light dust and lint. Heavy dust falls into spacious dust pan. Easy to clean tubes and remove pan. Various velocities for all needs.

REQUEST DETAILS AND SPECIFY NEEDS

BREUER ELECTRIC MFG. CO. 5114 N. Ravenswood Ave. CHICAGO 40, ILL.

DEUBLIN UNION

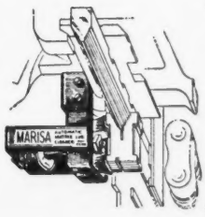


NEW TYPE rotating water joint for cooling or heating revolving shafts, cylinders or drums. Leakproof, corrosion proof, strong. Precision built in sizes from ¼" to 6" I.P.S. Send for Bulletin D-10 which gives specifications.

DEUBLIN COMPANY
NORTHBROOK ILLINOIS

RICHARDS *Since 1900*
KALAMAZOO, 13F
Saw-Trimmers, Flat and Curved Plate Routers, Stereotype Saws and Mortisers, Steel Rule Dies.
The most complete line built. See our page ad July issue or ask for catalog.

For Linotype and Intertype
REID MAGAZINE RACKS
ALSO FULL STOCK MOTOR PINIONS
VACUUM PUMPS
Order from WILLIAM REID CO., 2271 Clybourn, Chicago 14, Ill.



CLEAN MATRIX LUGS
AUTOMATICALLY
without removing from machine. Safe; uses fine wire brush. Easy to install. Model U for Intertypes and non-mixer Linotypes. Model LM for mixer Linotypes. $12.50 each, postpaid. Money-back Guarantee.
MARISA ENGINEERING PRODUCTS
52 Aldine Street Newark 8, N. J.

BAUM FOLDERS
RUSSELL ERNEST BAUM
615 Chestnut Street Philadelphia, Pennsylvania

EQUIPMENT FOR PRINTERS
Mitering machines • Composing sticks • Slug clippers • Band saws • Lead and rule cutters • Newspaper bases, files and racks.
H. B. ROUSE & COMPANY
2214 North Wayne Ave. Chicago, Illinois

★ STAR CUT CEMENT ★
Since 1936 — *For Mounting* — Since 1936
CUTS...STEREOTYPES...ELECTROTYPES
65c per tube-$5.25 per doz. $5.00 per doz. in two doz. lots, $4.00 per doz. in gross lots.
★ STAR CEMENT COMPANY ★
45 Malone Avenue, BELLEVILLE 9, N. J.

WANTED
Chemical Engineer or Chemist with experience in printing. For sales service, development and technical control in paper industry. Please state age, education, qualifications and salary desired. Headquarters will be Chicago, Ill. Write Box 263, PRINTING EQUIPMENT *Engineer*, 1276 West 3rd St., Cleveland, Ohio.

SAFETY·RELIABILITY·ECONOMY
CLINE
PRESS DRIVES
and
CONTROL
Reels, Tensions and Pasters...
CLINE SYSTEM
CLINE ELEC. MFG. CO.
Chicago: 211 West Wacker Drive
New York: 220 East 42nd Street
San Francisco: 1st Nat'l Bank Bldg

DUPLEX
TUBULAR VACUUM CASTING BOX
The modern method for making better plates—no buckling of the mat—suction holds the mat against the box smoothing it out and making the plates true and uniform.
THE DUPLEX PRINTING PRESS COMPANY
BATTLE CREEK, MICH.
New York Chicago

We Wish You

A YEAR OF TRANQUILLITY

The thing your business and every other business needs is a year free from jolting changes . . . a year of mutual confidence . . . a chance to operate with the steady confidence in day to day results—with Certified Mats as a great big help.

For dependable stereotyping, rely on Certified Mats

Certified DRY MATS

CERTIFIED DRY MAT CORPORATION, 9 Rockefeller Plaza, Dept. M, New York 20, N. Y.

A.P.S. STEREOTYPE
GUMMED PACKING
CORK BLANKETS
CREEPERS
POURING SHEETS
ROUTER BITS
TAILBOARDS

ALWAYS BEST AT

AMERICAN PUBLISHERS SUPPLY
P. O. Box 924 Lynn, Mass.

TINGUE
TRADE MARK
PRINTING PRESS
BLANKETS
AND DRAWSHEETS

TINGUE, BROWN & CO.

114-120 EAST 23rd ST., NEW YORK 10, N.Y. 723 E. WASHINGTON BLVD., LOS ANGELES 21, CAL.
1227 WABASH AVE., CHICAGO 5, ILLINOIS 507 PETERS STREET, S.W., ATLANTA, GA.
CANADIAN SALES AGENTS ROSS WHITEHEAD & CO. LTD. MONTREAL, CANADA

sufficiently exact to give good results in the Letouzey method. It is quite possible, however, that improvements in stereotyping may permit much more accurate reproduction than is at present commercially practicable. If this could be done, the Letouzey process could probably be adapted for use with rotary printing presses.

Proofing

Since practically no checking is permissible once the forms have been placed on the printing press, the type must be proofed in such a way as to give a true impression of what the finished page will be like. This is not possible when proofs are made with the type held loosely together by a page cord of string, since the characters are rarely level and are not pressed firmly against one another. Consequently, the face of the type receives neither ink nor pressure in the regular manner. When the type is washed up, dirt is introduced between the spearate characters, which causes rocking movements and other troubles which spoil the quality of the printing. With letters bound loosely together with string, it is only too easy to introduce in a line of 50 characters dirt amounting to about 1 mm. (0.03937 in.) in all. This means that such a line will be too long and will be constantly changing its dimensions. Cut bases in general must be prepared according to the same principles as type matter. Scrupulous care in cleaning, adjustment of height, leveling and mounting is necessary throughout.

Imposition

The chases which are normally used are not suitable for the Letouzey process. *It is essential to make use of chases which are mechanically irreproachable and which are interchangeable in the same series.* The chases *must* be perfectly plane and rectangular, with precise dimension; they must be very rigid, to avoid bending as far as possible. The type is first locked up in a small chase carrying one page only. Metal furniture of *accurate* dimensions is employed throughout, together with expanding quoins of novel design.[1] Since everything is perfectly square, the type fits closely into position against the walls of the chase and is easily secured by means of the special quoins and furniture. The page forms can be made up accurately according to any desired plan and the sizes of the margins can be predetermined and recorded for registration purposes. Once the single pages have been checked in a hand proofing press and passed as satisfactory, the characters can be transferred immediately to a larger chase (4, 8 or 16 pages, as the case may be). All that is necessary is for the printer to put the new form into the correct position on the bed of his press (there are guides which enable this to be done easily and rapidly), and the form falls automatically into register within the limits of precision set by the care of preparation and the materials employed.

It can hardly be stated too often that the presence of dirt or partly dried ink on the bed of the machine, on the rollers,

[1] *Editor's Note*—In general, these are similar to Challenge Hi-Speed Quoins.

100% AUTOMATIC SLUG SAWING

Odd measure slugs sawed to any measure as ejected from line-casting machine. Fast-accurate-economical.

MOHR SAW

MOHR LINO-SAW CO.
128 N. Union St. Chicago

SINGLE COLOR OFFSET PRESS by I. H. Sayre

Offers detailed technical explanation of the operation and adjustment of the small single color offset printing press. Bound in cloth, 284 pages with 99 illustrations. Price, $6. May be ordered from *Printing Equipment Engineer*, 1276 West Third St., Cleveland 13, Ohio.

cylinder bearers or on the chase, are fatal to the production of first class results.

Checking The Pressure Distribution By The Carbon Paper Process

The distribution of pressure over the form is checked in a novel way. This is done by means of a special carbon paper, which is found to be very sensitive to small changes of pressure if it is employed under suitable conditions.

First of all it is necessary to check the adjustment of the small hand press used for proofing. Special type is used for this purpose, consisting of Monotype characters of uniform height, which prints uniform circles of printing density about 75%. The small chase, when full, is placed in the hand proofing press, the quoins are loosened and the type is gently planed until each character bears down firmly on the bed of the machine; then the quoins are locked again. A sheet of *special carbon paper* to be used for printing is laid on the noncoated side, and on the top of this is placed *a piece of backing material*, of thickness and elasticity to correspond with that of the packing on the printing machine.

The roller is then passed over the type in the usual manner, using as light pressure as possible. (If the first result is too pale the pressure can be increased, but it is undesirable to increase the pressure more than is really necessary). The backing is then carefully removed and the carbon sheet is separated. The carbon sheet is held up to the light. If the press is working satisfactorily, the pattern observed should be a series of uniform dots. An excess of transparency at any one part or side or if the dots are weak or missing altogether, it is a sign that the pressure is too low at this point.

Two *types of defects* may arise:

1. There may be a gradual increase of transparency from one side of the sheet to the other. This shows that the cylinder is not mounted properly, and attention must be given to the mechanical adjustment of the press before further work can be done with it. Strips of carbon paper placed between the bearers will show at once whether the bearers are in contact over the whole length of the course, or whether the cylinder is supported by the type itself at any point. For, when removed, these strips should show that the carbon has been evenly pressed over the whole length, and if this is not so, the parts where the coating has not been removed show that the cylinder is not resting properly on the bearers at these particular points. In such cases the machine must be adjusted until it gives satisfactory results on test. (It should be noted that checking the mechanical adjustment of the printing machine is done in exactly the same way as with the small hand press, the only difference being that more of the special type and carbon paper is needed.)

The other kind of trouble which may be experienced is excess or deficiency of pressure in particular small areas. This is most likely to be due to dirt, even small particles tend to raise the face of the type above its proper level. Alternatively, the bed of the machine may be damaged. Remedies are obvious.

Let us suppose now that the machine is so adjusted that it gives satisfactory carbon prints with uniform dots. It should not be necessary to check the machine again for some time (perhaps one month) if no accident happens to it and *provided it is kept clean.*

The dots are now removed and the chase is filled in the ordinary way with Letouzey type. The chase is put back into the proofing press, unlocked, and the type is gently planed down as before until it is firmly in contact with the bed of the press. It is then locked in position. The carbon paper, and backing are placed over it and the roller is passed over just as before. Two proofs are now obtained. The carbon sheet, when held up to the light, shows the distribution of pressure over the form, and all the letters should be clear, clean cut and uniform in density. If there are large areas where the pressure is not uniform in density, it shows that the press has got out of adjustment and needs resetting and checking—or possibly the type has not been planed down properly against the bed of the machine. This point is important since, if the face of the type is to have the correct predetermined height, it is essential that the base of the type should be firmly in contact with the bed of the machine, which serves as a reference level from which all heights are reckoned. If proper care is taken, however, such faults will be rare.

A much more common fault is the heavy printing of a few isolated letters. If one particular letter is persistently high or low over the whole form, it is a clear indication that there is a fault in the Monotype or Linotype matrix, which has become dirty or worn. The remedy is clear. If the high letters occur at random, the trouble is almost certainly due to dirt on the bed of the machine, which should be cleaned immediately. If the carbon copy is satisfactory (which is usually the case in practice), nothing remains but to transfer the characters, furniture and quoins, just as they are to their appropriate positions in the large chase, which they will fit perfectly. When 4, 8 or 16 pages have been filled up in this way, the large chase is ready for the machine and no further checking is necessary. The only precaution required is to see that the bed of the press is perfectly clean before the new form is locked

POSTER CONTEST—Pleasurable was the announcement made in December by Wm. H. (Bud) Griffin, President of the International Association of Printing House Craftsmen, that the Los Angeles Club, through its president, Bob Kerr, had donated two beautiful identical trophies. The trophies are prizes in the inter-club contest sponsored by the International Association for the best poster window card produced for the promotion of International Printing Week. There is one trophy for the metropolitan clubs and one for the smaller clubs.

Shown in the picture above, are (left) Bob Kerr, president of the Los Angeles Club of Printing House Craftsmen presenting the trophies to International President Wm. H. Griffin.

The mechanical structure of the contest is simple: Physical size is specified as not smaller than 11 in. by 14 in., nor larger than 14 in. by 22 in. It shall have been produced and used by the club submitting it for the promotion of Printing Week. Two copies are to be submitted to the International Convention in September 1947. The entries will be judged by three judges selected by President Griffin at the 1947 convention. The committee will evaluate the worth of the posters on the basis of 35 points for excellence of copy and ideas, and 65 points for excellence of design and production. The trophies will be presented to the two winning contestants at the 1947 convention.

in position; all particles of dust and ink *must* be carefully wiped away, however small they may seem to be. The type is then loosened by unlocking the quoins, and the characters are gently planed down. Finally, the quoins are tightened up again. The press is now ready to run and the first prints produced in this way are usually quite satisfactory and can be used on edition. Spoiled sheets work out at less than one per thousand, and these failures are mostly through torn or crumpled sheets for which the adjustment of the type is in no way to blame.

Paper

Provided the same kind of paper is being used, the press should run without adjustment for a considerable period. If, however, the paper is replaced by paper having widely different thickness, elasticity or hardness, some adjustment will be necessary in order to secure the best results. This is effected by altering the cylinder covering. If papers of standard thickness and hardness are used, there should be no difficulty in building up experimental data giving the most suitable type of cylinder covering for each grade and thickness of paper. It is not necessary to make any alteration in the type, the relative heights of the different characters having been fixed once and for all in this process.

Conclusion

The Letouzey process is a letterpress printing process. It consists in introducing two elements—*accuracy* and *measure* in every step of printing. No makeready has to be made on the press. Everything is prepared beforehand. The standing time of the machine is practically cut down to a minimum of a few minutes instead of some hours.

To Investigate German Press Manufacture

The manufacture of printing presses in Germany will be studied for the benefit of the American Graphic Arts industry by W. M. Stocker, consultant for the Cuneo Press, New York, N. Y., John C. Green, Director, Office of Technical Services, Department of Commerce, has announced. Mr. Stocker recently left for Germany.

As investigator for CTS' Technical Industrial Intelligence Division, Mr. Stocker will report on patents, inventions, tools, engineering processes, and materials developed by the German printing press manufacturers, according to Joseph T. Mayer, chief of TIID's Machinery Unit. His findings will be made available to the public. Although this investigation is sponsored by the Department of Commerce, Mr. Stocker's expenses will be borne by the Cuneo Press.

The German printing industry as yet has not been covered by American investigators, Mr. Green said. American companies interested in making on-the-spot studies of German technology may still arrange to send their experts overseas through OTS.

ANNUAL EDITORIAL INDEX

JANUARY 1946 TO DECEMBER 1946 INCLUSIVE

A

Accurate Slugs Lengths, Are You Getting Them? 36, Feb.
Ad Benches—How the men who work on them want them improved, by Don Shelley, 28, Mar.
Ad Man's Universal Work Frame, 20, May.
Advocates Elimination of Leaders, 31, Sept.
Air-Operated Pump Insures that Stereo Plates Will Be Cast Alike, 33, Oct.
Air utilized in various ways in manufacture of offset-lith presses, 56, Aug.
Alexander, E. H., Thy-mo-trol Electronic Motor Control, 13, Jan.
Analysis of Printing Processes for Use By Specialty Paper Converter, by R. P. Willard, 39, Oct.
Analyze Grievance Records at Periodic Intervals, 55, Apr.
Annis, Horace, Profitable Northwest Mechanical Conf., 22, Mar.
Application of an adhesive to Facilitate Sheridan Case-making Operations, 13, Jan.
Aslinger, Elmer, Photo-Engraving Plant for Small Newspaper, 41, Oct.
Autobiography of A Job Ticket, by A. G. Fegert, 32, August.
Awards Offered Printing Machinery Industry, 42, June.

ASSOCIATIONS

A.N.P.A.
Advocates Elimination of Leaders, 31, Sept.
Eliminating Scum on the Plate, by Jack Kelt, 32, Sept.
Members ANPA Mechanical Committee, 43, July.
Parade of Speakers discusses scientific research, 24, Sept.
Reports of ANPA Mechanical Committee on Research, 40, May.

Craftsmen:
Cleveland Craftsman's Creed, 26, Feb.
Cleveland Craftsmen's Twenty-Fifth Anniversary, 25, Feb.
Craftsmen's Convention Held in Montreal Has Technical Clinics, 13, Sept.
Dallas Craftsmen Observe Franklin Printing Week, 17, Mar.
International Craftsman's Association has Robust Growth, 27, August.

Great Lakes Conference:
Full-Time Machinist in Small Plant, 72, July.
Profitable Great Lakes Conference, by MacD Sinclair, 85, Dec.

Illinois Conference:
R.O.P. Color Clinic was Feature of Illinois Newspaper Mechanical Conference, 31, Oct.

ITCA:
ITCA Meeting Largest in History of Association, 43, Oct.

Iowa Conference:
Iowa Executives hold first postwar newspaper mechanical conference, 86, July.

N.A.P.L.:
NAPL Convention, 68, Sept.
NAPL Devotes Greater Portion of Convention Program to Current Major Problems, 16, Nov.

New England Conference:
Executives of New England Newspaper Composing Rooms Hold Meeting, 70, July.
Color Dominates Discussions at New England Newspaper Mechanical Conf., by Francis J. Britton, 26, Nov.

New Jersey Conference:
Executives of New Jersey Hold Mechanical Conference, by Julian Pollak, 60, July.

Northwest Conference:
Profitable Northwest Mechanical Conf., by Horace Annis, 22, Mar.

P.N.P.A.:
Getting Them Together Would Solve Problems, by Leon A. Link, 56, May.
Shrinkitis and other problems discussed at PNPA Conference, 24, May.

Printing Industry of America:
PIA Speakers discuss Technical Future of The Industry in Atlantic City, 28, Oct.

S.N.P.A.:
Closely Knit Conference Held by Eastern Division of SNPA Mechanical Conference, 42, Sept.
Eastern Division Mechanical Conference, 72, July.
Executives of Western Division SNPA Mechanical Conference Hold Meeting in Dallas, by Julian Stag, 39, Sept.

B

Backed Up Enamel Stock Within Few Hours, 25, June.
Banana Machine—Suggestions for Casting Clear-Face Headletter Slugs on Line-Composing Machines, 53, July.
Biegeleisen, J. I., Silk Screen, 22, June.
Bingham, Carl G., Rubber or Synthetic Rollers for Newspaper Presses, 42, May.
Blue Line Gadi Prints, by Herman A. Slater, 21, Apr.
Britton, Francis J., Color Dominates Discussions at New England Mechanical Conf., 26, Nov.
Bronze Stamping Leaf, by M. S. Kantrowitz, 40, May.
Buchdahl, Rolf, Relationship between the Rheological Properties and Working Properties of Printing Inks, 59, Aug.
Burke, J. A., No. 1 Problem in Newspaper Publishing is Production, 42, Mar.
Buskirk, Phil, Molding Technique for Plastic Plates, 66, Aug.
Buur, G. M., Modified Dog Prevents Blank Papers, 34, Oct

Books:
Advertising Production, 33, Nov.
Experiences of Mr. Hopewell, 26, June.
Great Lakes Mechanical Conference Report, 34, Mar.
How to Evaluate Supervisory Jobs, by Albert N. Gillett, 52, Apr.
It's a Secret, by Henry Hoke, 27, Feb.
Lettering From A to Z, 54, Oct.
Maple Press's Annual Keepsake Edition, 50, Feb.
Notes on Modern Printing by Merle Armitage, 34, Mar.
Simplified Cost and Accounting System for Printers, by George Vogl, 34, Mar.
Typography, Layout & Advertising Production, 54, Oct.
What Price Supervision, by R. D. Bundy, 44, July.

Bindery:
Bronze Stamping Leaf, by M. S. Kantrowitz, 40, May.

C

Cabbage Rose to Hybrid Tea, by E. L. Geiger, 17, Feb.
Carboloy Routing Chuck for Plastic Plates, 28, Sept.
Cellulose Gum—A New Desensitizing Gum, by Dr. P. J. Hartsuch, 51, Aug.
Census of Electric Industrial Trucks in Use, 40, June.
Cheese Rolls for Printing Tabloid Sections Save 110 T. of Newsprint per Month, 52, Oct.
Constructive Action taken at Detroit by Advertising Executives and plate and mat-makers and by newspaper management, 28, Feb.
Continuous-Tone Color Printing, by Adam Henri Reiser, 24, Mar.
Conversion of Printing Media, by A. E. Giegengack, 43, Oct.
Curling of Lithograph Paper by Robert Reed, 22, Mar. 13, May.
Conveyor System Increases Efficiency of Card Manufacturing, by Francis A. Westbrook, 34, Nov.

Composing:
Accurate Slugs Lengths, Are You Getting Them? 36, Feb.
Ad Benches, How the men who work on them want them improved, by Don Shelley, 28, Mar.
Ad Man's Universal Work Frame, 20, May.
Autobiography of A Job Ticket at Monsen-Chicago, by A. G. Fegert, 32, August.
Banana Machine-Suggestions for Casting Clear-Face Headletter Slugs on Line-Composing Machines, 53, July.
Efficient Display Copy and Composition Handling System at Dayton (O.) *Journal-Herald*, 15, Jan.
Gauge Determines Type Sizes Quickly, 30, Mar.
Gremlin Matrices on Line-Composing Machines do Disappearing Act, 54, July.
Impurities in Type Metals, by M. S. Kantrowitz, 48, Mar.
Knives—Their Application and Adjustment, by Everett Shaffstall, 90, Dec.

Molding Printing Types from Plastic Substances, 18, Jan.
Mountains and Mole Hills, by An Old Timer, 44, Nov.
Page Forms for newspapers produced by typewriter-like composition, 25, Feb.
Peg Board informs Monotype caster when to replenish type cases, 46, Aug.
Photo-Typesetting—Two New Possible Developments in the Graphic Arts Industries, 18, May.
Realization of an Ideal, by MacD Sinclair, New Plant for Typographic Service, Inc., 45, July.
Slug Designed to be Cast from Stereotype Mats in Ludlow, 26, Mar.
Steam Pressure Ruins Pig Mold, 25, June.
Type Case has Been Rearranged for Newspaper Advertising Composition, by Al P. Oberg, 32, Nov.
Wrong Font Matrices Easily Detected in Line-Composing Matrix Lines, by Charles H. Stout, 95, Dec.

D

Dead Metal—What you can do to help relieve the problem, 42, Oct.
Developments in Fast Four Color Web Offset publication Printing Plant of Trenton (N. J.) *Times*, 21, Feb.
Dickerson, Robt. W., Noise Reduction in Newspaper Plants, 26, Oct.
Dickerson, Robert W., Planning Printing Plants, 58, July
Distortion in the stereotype mat, 26, Apr.
Drying Problems with Printing Inks, by G. L. Erikson, 18, Sept.

E

Eliminating Scum on the Plate, by Jack Kelt, 32, Sept.
Efficient Display Copy and Composition Handling System at Dayton (O.) *Journal-Herald*, 15, Jan.
Electronic Register Control Discussed, 48, Aug.
Engineering Methods Dominate Plant of Waverly Press, Baltimore, Md., by Edward M. Passano, 30, May.
Equipment Makers Granted Price Increase by OPA, 23, Feb.
Erikson, G. L., Drying Problems with Printing Inks, 18, Sept.
Offset and Sheet Sticking, 45, Oct.
Mottling and Other Ink Problems.
Overprinting Problems, 215, Dec.

Engraving:

Color of Acid Resist Indicates Base Height, 26, Feb.
Eliminating Scum on the Plate, by Jack Kelt, 32, Sept.
Newspaper Photo-engraving Plant Layout, 62, July.
Page Forms for newspapers produced by typewriter-like composition, 25, Feb.
Photo-Engraving Plant for Small Newspaper Plant, by E. Aslinger, 41, Oct.
Plate-Making Short-Cuts Grouped Under one Roof for Benefit of Letterpress Printer, by Adam Henri Reiser, 58, Aug.
Technological Progress in Photo-Mechanical Processes Summarized, by Ernest E. Jones, 42, Oct.
Tests reported by manufacturer on Zomag line and halftone engravings, by W. Roy Manny, 44, May.

Equipment and Supplies:

Air Driven Saw and File, 17, Apr.
Aluminum Foil Laminant, 27, May.
Arlin Gripper Gauge, 22, Nov.
ATF's Stripping Machine, 92, Dec.
Ball Bearings with Angular Contact, 19, Apr.
Banthin 13x20 Letterpress Cylinder Press, 27, May.
Base Lock Rubber Type System, 37, Oct.
Better Wetter Than Spit, 20, Nov.
BEX UT-30 Washing Compound, 18, Mar.
Bijur Window Units, 56, Sept.
Cellulose Gum—A New Desensitizing Gum, 51, Aug.
Channel Entrance Brushes, 21, Mar.
Circle Cutting Machine, 36, Oct.
Cold Run Resin Glue, 56, Sept.
Color Conditioning Booklet, 22, Nov.
Color Conditioning for Industry, 52, Sept.
Color Harmony Manual, 38, Oct.
Collator, Automatic Sheet, 19, Mar.
Concrete Maintenance Discussed, 20, Nov.
Copyfitting Slide Rule, 55, July.
Cramer Model E Interval Timer, 18, Mar.
Davidson Paper Master, 21, Nov.
Die Cutting Booklet, 24, Nov.
DoAll Zephyr Stereotype Sawing Machine, 36, Oct.
Douthitt Plate Cooler for Photo-engravers, 93, Dec.
Doyle Infrared Super Power Newspaper Sheet Dryer, 93, Dec.
Drills—How to Sharpen Them, 24, Nov.
Dry Powder Offset Eliminator, 26, May.
Electric Blower, 56, July.
Electric Fork Truck, 4000 lb. Capacity, 48, Aug.
Electronic Tachometer, 37, Oct.
Exposure Meter for Use with ASA Film Rating System, 56, July.
Facsimile Models, 26, May.
Fire Extinguisher, 15 lb. Carbon Dioxide, 28, May.
Fire Extinguisher, All-Out, 20, Mar.
Electrol Remote Control, 18, Apr.
Folding Steps for Trucks, 56, July.
Force Case Numberer, 56, July.
Gardiner Solders, 18, Mar.
G-E Electronic Drive, 20, Nov.
German Developed Screen for Reproduction of Photographs, 56, Sept.
Glaswik Moistener, 18, Mar.
Goss Unitube Press Improved, 17, Apr.
Gun-Fil Lubricators, 47, Aug.
Hoe Offset Press, 20, Nov.
Hydry Booklet, 57, July.
Industrial Humidifying Unit, 19, Mar.
Infra-Matic Stereo Mat Automatic Pre-Shrinker, 19, June.
Inkmaster Typographic Rollers, 35, Oct.
Intertype Improved First Elevator Level Link, 21, June.
Jogger, Double Action Vibrating, 18, Mar.
Lawson Drill Slotter, 47, Aug.
Lewis-Shephard Lift, Dumper and Transfer Table, 20, Mar.
Lighting Maintenance Ladder, 38, Oct.
Line Composing Machine Plunger Cleaner, 20, Mar.
Line Composing Matrix Lug Cleaner, 20, Apr.
Mack Mercu-Trol, 36, Oct.
Makeready Knife, 54, Sept.
Max-Min Thermometer, 35, Oct.
Miehle No. 29 Letterpress 22x28, 20, June.
Monomelt Heavy Duty Rotary Plate Shaver, 22, Jan.
Mort Dampener Cleaner, 47, Aug.
Multigraph Model 250, 28, May.
Multi-Plate Mounting and Multi-Color Proving Machine, 22, Jan.
Nitroloid Tabbing Compound, 21, Nov.
Opti-Chek for Registering Rotary Press Plates, 19, Apr.
Panel Type Tachometer, 52, Sept.
Paper Cutter, 29, May.
Parchment Master Reproduction Process, 56, Sept.
Patent for Self-Sealing Envelope Available, 24, Nov.
Photo-Engraving 60-Line Contact Screen, 21, Mar.
Photo-Engravers' Router Bit Grinder, 91, Dec.
Photoswitch Electronic Timer, 35, Oct.
Planagraphers' Rig & Reel, 37, Oct.
Plasticizing Oil, 21, Mar.
Pliatab Cold Padding Glue, 19, June.
Portable Color Ink Fountain, 92, Dec.
Printed Radio for FM Broadcasters, 55, July.
Proof Press, Four-Color High Speed, 94, Dec.
Proof Press Streamlined, 19, June.
Pulling Proofs, 22, Nov.
Pyro Immersion Pyrometer, 18, Apr.
Pyro Surface Pyrometer, 21, June.
Rainbow Printing Articles Available, 18, Apr.
Repeating Flash Bulb, 18, Apr.
Revolvator Hydraulic Lift, 20, June.
Service and Maintenance Manual, 22, Nov.
Seybold Heavy 40 in. Cutter, 52, Sept.
Seybold 36 in. Cutter, 49, Aug.
Skilbeck Humidifier, 18, Mar.
Star Thermostat, 91, Dec.
Stereo Color Pre-Register Machine, 52, Sept.
Stroke Counter with Over-Travel Arm, 21, Mar.
Takk Static Eliminator, 21, Nov.
Three Core Solder, 20, Apr.
Thy-Mo-Trol Electronic Motor Control, 13, Jan.
Towmotor with Side-Mounted Motor, 21, June.
Transitank Fire Extinguishing Unit, 19, Apr.
Universal Hydraulic Molding Press, 54, Sept.
Vandercook Safe Electric Proof Press, 50, July.
Vibro-Levelers Bulletin, 74, July.
Westinghouse Life-Line All-Steel Motors, 23, Nov.

F

Fegert, A. G., Autobiography of a Job Ticket at Monsen-Chicago, 32, Aug.
Vanderecook Announces New Safe Electric Proof Press, 50, July.
First Impression Newspaper Printing Free from Offset, by F. L. Yeager, 13, Nov.
Flattening and Drying Stereo Mats for Better Plates, 89, July.
Forster, William G., Hydry Inks, 15, Apr.
Full-time Machinist in Small Plant, 72, July.

G

Geiger, E. L., Cabbage Rose to Hybrid Tea, 17, Feb.
Getting Them Together Would Solve Problems, by Leon A. Link, 56, May.
Geigengack, A. E., Conversion of Printing Media, 43, Oct. Speaks Plainly with Respect to Diversion of Work, 34, Feb.
Gneuhs Improved Mailing Bench Eliminates Lifting Newspapers, 32, Apr.
Graphic Arts Research, by MacD. Sinclair, 23, Oct.
Graphic Arts Spray Manufacturers Non-Offset Spray Materials Again Confirmed, 36, Mar.
Gremlin Matrices on Line-composing Machines Do Disappearing Act, 54, July.

Gravure.:

Analysis of Printing Processes for Use by Specialty Paper Converter, by R. P. Willard, 39, Oct.
Continuous-tone Color Printing, by Adam Henri Reiser, 24, Mar.
Making Colored Plates for Comics, by Adam Henri Reiser, 16, Jan.
Plate-making Short-cuts Grouped Under One Roof for Letterpress Printing, 58, Aug.
Rotogravure—Three Types of Jobs Discussed as Suitable for the Process, by John D. Murray, 13, Apr.
Sunday Comics by Rotogravure, 27, Oct.

H

Harrold, C. W., Repair of Scored Cylinders, 36, Apr.
Hartsuch, Dr. P. J., Cellulose Gum—A New Desensitizing Gum, 51, Aug.
High Metal Prices, 97, Dec.
Huebner Comments Upon 1946 Equipment and Industry Trends, by Wm. C. Huebner, 12, Jan.
Huebner, Wm. C., Comments Upon 1946 Equipment and Industry Trends, 12, Jan.
Hydry Inks, by William G. Foster, 15, Apr.

I

Impurities in Type Metals, by M. S. Kantrowitz, 48, Mar.

Ink:

Drying Problems with Printing Inks, by G. L. Erikson, 18, Sept.
Hydry Inks, by William G. Foster, 15, Apr.
Mottling and Other Ink Problems, by G. L. Erikson, 15, Nov.
Relationship between the Rheological Properties and Working Properties of Printing Inks, by Rolf Buchdahl and Joan E. Thimm, 59, Aug.

J

Jones, Ernest E., Technological Progress in Photo-mechanical Processes Summarized, 42, Oct.

K

Kantrowitz, M. S., Bronze Stamping Leaf, 40, May.
Kantrowitz, M. S., Impurities in Type Metals, 48, Mar.
Kantrowitz, M. S., Silvering of Plastic Molds, 23, Mar.
Kantrowitz, M. S., Permanence and Durability of Paper, 46, Oct.
Kelt, Jack, Eliminating Scum on the Plate, 32, Sept.
King, Howard N., Newspaper of Tomorrow, 72, Aug.
Kirk, Charles M., Labor Conservation Devices at Detroit *News*, 22, May.
Knives—Their Application and Adjustment, by Everett Shaffstall, 90, Dec.

L

Labor and Employee Conservation Devices at the Detroit *News*, by C. M. Kirk, 22, May.
Letterpress Commercial Printer and Research, by MacD. Sinclair, 28, May.
Lighting Has Made Seeing Tasks Effortless, by Wm. D. McCauley, 55, Aug.
Link, Leon A., Getting Them Together Would Solve Problems, 56, May.
Low Temperature Causes Registration Problems, 18, Jan.

Letters to the Editor:

Air Pump Installed on Stereo Junior Autoplate, R. Lionais, 97, Dec.
Preventing Leaders Punching Through, Donnell F. Shortell, 97, Dec.

Lighting:

Lighting Has Made Seeing Tasks Effortless in Daily Newspaper, by Wm. D. McCauley, 55, Aug.

M

McCauley, Wm. D., Lighting Has Made Seeing Tasks Effortless, 55, Aug.
Major Faults in Newspaper Advertising Mats and Plates, 28, Feb.
Making Plates for Colored Comics, by Adam Henri Reiser, 16, Jan.
Management, The Foreman (in the middle) Union Membership, 45, Oct.
Manny, W. Roy, Tests Reports by Manufacturer Indicate Zomag Line and Halftone Engravings Possess Maximum Wearing Qualities Under Repeated Stereotype Mat Molding, 44, May.
Mechanical Executives with Portfolio, by MacD. Sinclair, 29, May.
Meddick, W. A., Paper Handling by Electric Truck, 13, Mar.
Meredith Announces Use of First Press for Electro Plastic Molding, 34, Apr.
Modified Dog Prevents Blank Papers, by G. M. Buur, 34, Oct.
Molding Printing Types from Plastic Substances, 18, Jan.
Molding Technique for Plastic Plates, by Phil Buskirk, 66, Aug.
Mountains and Mole Hills, by an Old Timer, 84, July; 44, Nov.
Mottling and Other Ink Problems, by G. L. Erikson, 15, Nov.
Murray, John D., Rotogravure—Three Types of Jobs Discussed as Suitable for Process, 13, Apr.

Mail Room:

Gneuhs Improved Mailing Bench Eliminates Lifting Newspapers, 32, Apr.

N

Newsprint Handling at Pittsburgh *Press*, 44, Oct.
Newspaper Color Technique at *Chicago Tribune*, 38, May.
Newspaper of Tomorrow, by Howard N King, 72, Aug.
No. 1 Problem in Newspaper Publishing is Production, by J. A. Burke, 42, Mar.
Noise Reduction in Newspaper Plants, by Robt W. Dickerson, 26, Oct.

New Plants:

Copifyer Lithograph Corp. Planning Future Plant, 9, June.
Curtis Publishing Company Fine New Plant, 28, Apr.
Fairchild Press New $1,200,000 Plant, 42, Apr.
No. 1 Problem in Newspaper Publishing is Production by J. A. Burke, 42, Mar.
Planning Printing Plant, by Robert W. Dickerson, 58, July.
Realization of An Ideal—New Plant for Typographic Service, Inc., Indianapolis, 45, July.
Rochester Institute of Technology New Building, 16, Apr.
Schmidt, E. F., Co., New Plant, 38, Apr.
Three Dimensional Planning for Printing Plants, 24, June.
Whiting Press, Inc., Windowless Plant Provided with Year-Around Air Conditioning, 83, Dec.

O

Oberg, Al P., Type Case has been Rearranged for Newspaper Advertising Composition, 32, Nov.
Offset and Sheet Sticking, by G. L. Erikson, 45, Oct.
Old Plate Conveyor Belt Useful in Preventing Newsprint Roll Scuffing, 67, July.
Old Timer, Mountains and Mole Hills, 84, July- 44, Nov.
Outlook for New Printing Equipment, by E. G. Williams, 13, Jan.
Outlook for The Year 1946, by H. A. Porter, 12, Jan.
Overprinting Problems, by G. L. Erikson, 215, Dec.

Offset Lith:

Analysis of Printing Processes for Use by Specialty Paper Converter, by R. P. Willard, 39, Oct.
Blue Line Gadi Prints, by Herman A. Slater, 21, Apr.
Cellulose Gum—A New Desensitizing Gum, by Dr. P. J. Hartsuch, 51, Aug.
Curling of Lithographic Paper, by Robt. F. Reed, 22, Mar. 13, May.
Developments in Fast Four-color Web Offset Publication Printing in Plant of Trenton (N. J.) *Times*, 21, Feb.
Offset and Sheet Sticking, by G. L. Erikson, 45, Oct.
Planning Future Plant at Copifyer Lithograph Corp. 9, June.
Plate-Making Short-Cuts Grouped under One Roof for Benefit of Letterpress Printing, by Adam Henri Reiser, 58, Aug.
Repair of Scored Cylinders, by C. W. Harrold, 36, Apr.
Research at LTF, 92, July.
Two Steps Which Can Be Taken by Plants Operating Offset Equipment, 38, Oct.
Why Put in Offset? by Arthur A. Wetzel, 48, May.

P

Page Forms for Newspapers Produced by Typewriter-Like Composition, 25, Feb.
Paper Dealers Urged to Protect Small Printers, 52, May.
Paper Handling by Electric Truck, 13, Mar.
Paper Research Resumed by LTF, 64, Aug.
Paper Situation as It Affects The Commercial Printer, 48, Apr.
Passano, Edward M., Engineering Methods Dominate Plant of Waverly Press, Baltimore, Md., 30, May.
Patent Granted for Luminescent Printing, 42, Apr.
Peer, Harold M., Schedule Maintenance in Mechanical Dept. of McCall Corp., 39, Aug.
Peg Board Informs Monotype Caster When to Replenish Type Cases, 46, Aug.
Permanence and Durability of Paper by M. S. Kantrowitz, 46, Oct.
Photo-Engraving Plant for Small Newspaper Plant, 41, Oct.
Photo-Typesetting, Two New Possible Developments in The Graphic Arts Industries, 18, May.
Pitch Line of Gears, 66, Sept.
Planning Future Plant at Copifyer Lithograph Corp., 9, June.
Planning Printing Plant, by Robt. W. Dickerson, 58, July.
Plate-Making Short-Cuts Grouped Under One Roof for Benefit of Letterpress Printer, by Adam Henri Reiser, 58, Aug.
Porter, H. A., Outlook for The Year 1946, 12, Jan.
Preventing Leaders Punching Through, by Donnell F. Shrotell, 97, Dec.
Printed Radio Provided for At Station WGHF, 26, Jan.
Proof Press Manufacturer Opens Chicago Salesroom, 14, Jan.
Pre-Printed Color Inserts Tipped Automatically on Page as Newspaper Is Being Printed, 98, Dec.

Paper:

Curling of Lithographic Paper, 22, Mar. 13, May.
Paper Dealers Urged to Protect Small Printers, 52, May.
Paper Handling by Electric Truck, 13, Mar.
Paper Situation as it Affects the Commercial Printer, 48, Apr.
Paper Problems, 52, Aug.
Paper Research Resumed by LTF, 64, Aug.
Permanence and Durability of Paper, by M. S. Kantrowitz, 46, Oct.

Plastics:

Carboloy Routing Chuck for Plastic Plates, 28, Sept.
Meredith Announces Use of First Press for Electro Plastic Molding, 34, Apr.
Molding Printing Types from Plastic Substances, 18, Jan.
Molding Technique for Plastic Plates, by Phil Buskirk, 66, Aug.
Silvering of Plastic Molds, by M. S. Kantrowitz, 23, Mar.

Pressroom:

Analysis of Printing Processes for Use by Specialty Paper Converter, by R. P. Willard, 39, Oct.
Backed up Enamel Stock Within Few Hours, 25, June.
Color Technique at Chicago *Tribune*, 38, May.
Developments in Fast Four-color Web Offset Publication Printing in Plant of Trenton (N. J.) *Times*, 21, Feb.
Finger Nail Enamel for Platen Makeready, 90, July.
First Impression Newspaper Printing Free from Offset, by F. L. Yeager, 13, Nov.
Hydry Inks, by W. G. Forster, 15, Apr.
Low Temperature Causes Registration Problems, 18, Jan.
Modified Dog Prevents Blank Papers, by G. M. Buur, 34, Oct.
Noise Reduction in Newspaper Plants, by Robt. W. Dickerson, 26, Oct.
Old Plate Conveyor Belt Prevents Newsprint Roll Scuffing, 67, July.
Overprinting Problems, by G. L. Erikson, 215, Dec.
Page Forms for Newspapers Produced by Typewriter-like Composition, 25, Feb.
Patent Granted for Luminescent Printing, 42, Apr.
Pre-printed Color Inserts Tipped Automatically on Page as Newspaper Is Being Printed, 98, Dec.
Repair of Scored Cylinders, by C. W. Harrold, 36, Apr.
Rubber or Synthetic Rollers for Newspaper Presses, by Carl G. Bingham, 42, May.
Slur and Other Evils Eliminated in Newspaper Pressroom, by E. R. Weiskittel, 33, Oct.
Sound Conditioned Pressroom, by Francis A. Westbrook, 11, Jan.
Spraying Rollers, 16, Jan.
110 T. of Newsprint per Month Saving Made by Portland (Ore.) *Oregonian* through Cheese Rolls, 52, Oct.
Relationship between The Rheological Properties and Working Properties of Printing Inks, by Rolf Buchdahl and Joan E. Thimm, 59, Aug.
Trapping, 66, Oct.

Printing Patents Reports: 27, Jan.; 42, Feb.; 39, Mar.; 35, Apr.; 45, May; 35, June; 79, July; 73, Aug.; 61, Sept.; 57, Oct.; 45, Nov.; 105, Dec.

Production Methods:

Conveyor System Increases Efficiency of Card Manufacturing and Printing, by Francis A. Westbrook, 34, Nov.
Efficient Display Copy and Composition Handling System at Dayton (O.) *Journal-Herald*, 15, Jan.
Engineering Methods Dominate Plant of Waverly Press, Baltimore, Md., 30, May.
Gneuhs Improved Mailing Bench, 32, Apr.
Old Plate Conveyor Belt Useful Prevents Newsprint Roll Scuffing, 67, July.
Overprinting Problems, by G. L. Erikson, 215, Dec.
Page Forms for Newspapers Produced by Typewriter-like Composition, 25, Feb.
Paper Handling by Electric Truck, 13, Mar.
Planning Future Plant at Copifyer Lithograph Corp., 9, June.
Plate-Making Short-Cuts Grouped Under One Roof for Letterpress Printer, 58, Aug.
Pre-printed Color Inserts Tipped Automatically on Page as Newspaper Is Being Printed, 98, Dec.
Schedule Maintenance in Mechanical Dept. of McCall Corp., by Harold Melville Peer, 39, Aug.
Three Dimensional Planning for Printing Plants, 24, June.

R

Realization of an Ideal, by MacD. Sinclair, 45, July.
Reed, Robert F., Curling of Lithographic Paper, 22, Mar. 13, May.
Relationship between the Rheological Properties and Working Properties of Printing Inks by Rolf Buchdahl and Joan E. Thimm, 59, Aug.
Reiser, Adam Henri, Continuous-Tone Color Printing, 24, Mar.
Making Plates for Colored Comics, 16, Jan.
Plate-Making Short-Cuts Grouped Under one Roof for Letterpress Printer 58, Aug.
Repair of Scored Cylinders, by C. W. Harrold, 36, Apr.
Rotogravure—Three Types of Jobs Discussed as Suitable for the Process by John D. Murray, 13, Apr.
Rubber or Synthetic Rollers for Newspaper Presses? by Carl G. Bingham, 42, May.

Research:

Cabbage Rose to Hybrid Tea, by E. L. Geiger, 17, Feb.
Developments in Fast Four-color Web Offset Publication Printing in Plant of Trenton (N. J.) *Times*, 21, Feb.
First Impression Newspaper Printing Free from Offset, by F. L. Yeager, 13, Nov.
Graphic Arts Research, by MacD. Sinclair, 23, Oct.
Letterpress Commercial Printer and Research, by MacD. Sinclair, 28, May.
No. 1 Problem in Newspaper Publishing is Production by J. A. Burke, 42, Mar.
Overprinting Problems, by G. L. Erikson, 215, Dec.
Paper Research Resumed, by LTF, 64, Aug.
Pre-printed Color Inserts Tipped Automatically on Page as Newspaper is being Printed, 98, Dec.
Printing Ink Research to be done at Lehigh, 28, Apr.
Research at LTF, by W. E. Griswold, 92, July.
Slur and Other Evils Eliminated in Newspaper Pressroom by Packing with Thinner Gauge Blankets, by E. R. Weiskittel, 33, Oct.

S

Schedule Maintenance in Mechanical Dept. of McCall Corp., by Harold M. Peer, 39, Aug.
Shaffstall, Everett, Knives—Their Application and Adjustment, 90, Dec.
Shelley, Don, Ad Benches, How the Men Want Them Improved, 28, Mar.
Shortell, Donnell F., Preventing Leaders Punching Through, 97, Dec.
Shrinkitis and Other Major Newspaper Production Problems Discussed at PNPA Conv., 24, May.
Silk Screen by J. I. Biegeleisen, 22, June.
Silvering of Plastic Molds, 23, Mar.
Sinclair, MacD., Graphic Arts Research, 23, Oct.
Letterpress Commercial Printer and Research, 28, May.
Mechanical Executives with Portfolio, 29, May.
Photo-typesetting, Two New Possible Developments in the Graphic Arts, 18, May.
Profitable Great Lakes Mechanical Conference, 85, Dec.
Slater, Herman A., Blue Line Gadi Prints, 21, Apr.
Slugs Designed to be Cast from Stereotype Mats in Ludlow, 26, Mar.
Slur and Other Evils Eliminated in Newspaper Pressroom, by E. R. Weiskittel, 33, Oct.
Sound Conditioned Pressroom, by Francis A. Westbrook, 11, Jan.
Spink, Helm, Strictly Business, 31, Aug.
Spraying Rollers, 16, Jan.
Stag, Julian, Executives of Western Div. SNPA Mechanical Conf. Hold Meeting in Dallas, 39, Oct.
Steam Pressure Ruins Pig Mold, 25, June.
Stout, Charles H., Wrong Font Matrices Easily Detected in Line-Composing Matrix Lines, 95, Dec.
Strictly Business, by Helm Spink, 31, Aug.
Sunday Comics by Rotogravure, 27, Oct.

Stereotype:

Air-Operated Pump Insures that Stereo Plates Will Be Cast Alike, 33, Oct.
Cabbage Rose to Hybrid Tea, by E. L. Geiger, 17, Feb.
Distortion in the Stereotype Mat, 26, Apr.
First Impression Newspaper Printing Free from Offset, by F. L. Yeager, 13, Nov.
Flattening and Drying Stereo Mats for Better Plates, 89, July.
Impurities in Type Metals, by M. S. Kantrowitz, 48, Mar.
Labor Conservation Devices at Detroit *News*, Charles M. Kirk, 22, May.
Preventing Leaders Punching Through, by Donnell F. Shortell, 97, Dec.
Three-Color Process Page Printed in Newspaper on Same Day Picture Was Taken, 41, Oct.

T

Technological Progress in Photo-Mechanical Processes Summarized, by Ernest E. Jones, 42, Oct.
Tests Reported by Manufacturer on Zomay Line and Halftone Engravings, 44, May.
Three-Color Process Page Printed in Newspaper on Same Day Picture Was Taken, 41, Oct.
Three Dimensional Planning for Printing Plants, 24, June
Thy-mo-trol Electronic Motor Control, by E. H. Alexander, 13, Jan.
Trapping, 66, Oct.
Type Case Has Been Rearranged for Newspaper Advertising Composition, by Al P. Oberg, 32, Nov.
Two Steps Which Can Be Taken by Plants Operating Offset Equipment, 38, Oct.

U

U. S. Public Printer Speaks Plainly with Respect to Diversion of Work, 34, Feb.

V

Vandercook Announces Safe Electric Proof Press, by A. G. Fegert, 50, July.

W

Weiskittel, E. R., Slur and Other Evils Eliminated in Newspaper Pressroom, 33, Oct.
Westbrook, Francis A., Conveyor System Increases Efficiency of Card Manufacturing and Printing, 34, Nov.
Westbrook, Francis A., Sound Conditioned Pressroom, 11, Jan.
Wetzel, Arthur A., Why Put in Offset? 48, May.
Why Put in Offset? by Arthur A. Wetzel, 48, May.
Williams, E. G., Outlook for New Printing Equipment, 13, Jan.
Willard, R. P., Analysis of Printing Processes for Use by Specialty Paper Converter, 39, Oct.
Windowless Plant Provided with Year-Around Air Conditioning to Insure Exact Color Printing, 83, Dec.
Wrong Font Matrices Easily Detected in Line-Composing Matrix Lines, by Charles H. Stout, 95, Dec.

XYZ

Yeager, F. L., First Impression Newspaper Printing Free from Offset, 13, Nov.

TECHNICAL BOOKS

The books listed below may be ordered through Printing Equipment Engineer, 1276 W. Third St., Cleveland 13, Ohio. Because of narrow handling margin, please send remittance with order.

GENERAL

MATERIALS HANDLING—By Harry E. Stocker. This book is of vital interest to mechanical and production executives in printing and publishing plants. While not written specifically as a treatise on materials handling in the printing plant, yet a great deal of its text will be of value in the handling of materials in the plant and out-going shipments from the plant. Bound in light buckram, 309 pages, many illustrations, size 6 in. by 9¼ in. Price $5.00.

READING AS A VISUAL TASK—By Matthew Luckiesh, D.Sc. and Frank Moss, E.E. Most important research work to have been published in many years. For printers, designers, publishers, typographers and layout men. Readability of type, type faces, length of line, leading between lines, paper, ink, printing method and lighting are some of the factors involved in ease of reading. Size 5½ in. by 8⅝ in., 428 pages, bound in maroon gold stamped cloth. Price $5.

STANDARD BOOK ON ESTIMATING for PRINTERS—By Fred W. Hoch. Revised 1941 edition. This book is a primer for students and a reference for printers and estimators. Every printing plant should have a copy. Author explains all operations in commercial printing plant and shows production time allowance for each in hours and decimal hours. Size, 6 in. by 9¼ in., 268 pages, $3.75.

PRINTING INKS—Their Chemistry and Technology—**By Carleton Ellis.** Bound in cloth, 6 in. by 9½ in., 560 pages, well illustrated. For printing executives, pressmen, photo-engravers, plate-makers, ink manufacturers, chemists, paper-makers. Author stays close to printing plant. The solving of new production problems brought about by technological improvements, both in equipment and inks, created the urgent need for this book. Price $7.75.

GRAVURE

PHOTOGRAVURE—By H. Mills Cartwright. Covers all of photogravure's basic principles in concise and readable language. Rotogravure receives minor discussion but this is generally considered best textbook on photogravure process. Contains 202 pages, 34 illustrations, maroon cloth, size 6¼ in. by 9¼ in., $3.50 per copy.

STEREOTYPE

MANUAL OF STEREOTYPING—By Joseph Goggin. This 256-page book conveys technical information and manipulating procedure. Written by a practical stereotyper. Price $5.00.

OFFSET-LITH

LITHOGRAPHERS MANUAL—Compiled by Walter E. Soderstrom. Second revised edition. Technical information from copy to finished job. Nationally known technical men contributed the bulk of practical camera, platemaking and presswork information. Size 8½ in. by 11¼ in. Bound in red cloth, gold stamped. Many of the 368 pages are illustrated. Price $5 per copy.

THE SINGLE COLOR OFFSET PRESS—By I. H. Sayre. The purpose of this book is to offer a detailed technical explanation of the operation of the small single color offset printing press. It also carries recommendations for approved methods of printing technique and press care which apply to all offset printing. Much of the technical operating information applies to all makes of small offset presses.

Section I deals with Harris offset presses.
Section II deals exhaustively with materials used in offset printing.
Section III deals with ATF's Webendorfer single-color offset presses.

Illustrated with 99 figures in line and halftone; 284 pages; size, 6 in. by 9¼ in.; bound in blue cloth, cream stamped lettering. Price $6.

PHOTOGRAPHY AND PLATEMAKING FOR PHOTO-LITHOGRAPHY—By I. H. Sayre. This is an instruction book and an encyclopedia, both for the beginner and the experienced offset-lith platemaker. Revised edition. Illustrated. New section on color process platemaking techniques included. Price $6.00.

PRESSROOM

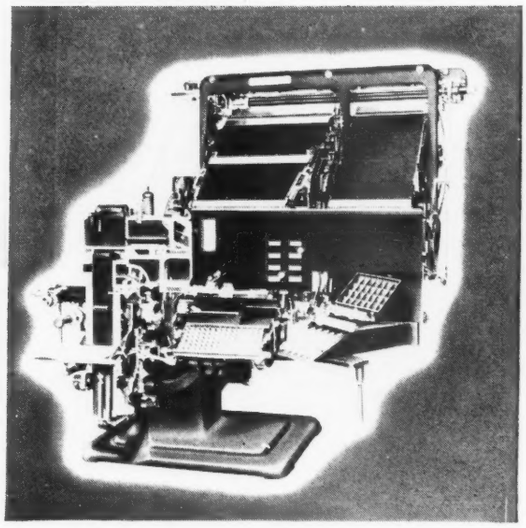
PRESSROOM PROBLEMS AND ANSWERS—By Fred W. Hoch. Might be considered a miniature encyclopedia since it contains answers to 334 pressroom problems which have been answered by Mr. Hoch. Written in language of journeyman pressman. Pressmen, production men, paper and ink manufacturers, electrotypers and photo-engravers will find this book of high utility when pressroom problems arise in which tendency is to lay blame on furnished materials used in pressroom production. Size, 6 in. by 9½ in., 258 pages, gold stamped blue cloth. Price, $2 per copy.

HOW TO ADJUST WORK-UPS—By Wm. H. Lichter and Geo. F. Smalley. Booklet consists of 24 pages in which are analyzed and remedies are given for prevention and/or elimination of work-ups. Material written as result of actual plant experience. Size, 5¼ in. by 7¼ in. Price, $1 per copy.

HANDBOOK FOR PRESSMEN—By Fred W. Hoch. Book written by authority on all phases of flat-bed letterpress production for the practical pressman. Contains 248 pages, 26 illustrations and 24 charts, $3 per copy.

Send order with remittance to PRINTING EQUIPMENT *Engineer*
1276 West Third Street • Cleveland 13, Ohio

In composing machine progress too, the past can mirror the future



1922 The Wide-Tooth Matrix for longer matrix life, and improved distribution. An Intertype development. **1931** The Autospacer for automatic quadding and centering. Another Intertype "First." **1932** The Combination 72-90-Channel Mixer for mixing in one line, matrices from three types of magazines...without shifting magazines. Still another Intertype advance. **1937** The 30-Em Six-Mold Disk...the third great Intertype contribution within the short span of six years. **1939** The No-Turn Automatic Electric Magazine Shift or "Autoshift"...another vital time-saver, Intertype-inspired. **194X** Judge the future by the past. The Intertype policy of continuous, painstaking research to make composing machines ever more productive and composing room practice more profitable, promises much to operators, foremen and owners in the days ahead. For the answer to line-composing problems...*Ask Progressive Intertype.*

SET IN INTERTYPE [illegible] FAMILY

INTERTYPE BROOKLYN 2, N. Y.